

# TerraForm Power, Inc.

## House of Rising Sun: Initiate With Buy Rating

### Initiate at Buy with \$38 PT; yield more than compensates for risk at this level

TerraForm Power (TERP) is the first offshoot from SunEdison (SUNE) as SUNE actively continues to de-risk and evolve towards the model of a high quality total return offering. While the YieldCo structure may be more foreign to tech/alt. energy investors accustomed to a gross margin defined business model, utility investors have been quick to embrace it. TERP inherently embeds greater development risk than either NextEra's YieldCo or NRG Yield as those utility spin-offs have inventories of existing assets, leading to [TERP's notably wider yield in \(100bp in '16E\) than NYLD](#), a similar comp. Given the scale of development opportunities before SUNE/TERP, *we believe this gap can be closed*. We see substantial development opportunity before SUNE, enabling meaningful drop-down growth the US and abroad. Bottom line, we remain bullish on renewables, complementing our NEE Buy-rating with a new Buy on TERP.

### First Wind deal unlocks expansion opportunity: no longer just solar

Shares are up ~30% following the First Wind deal and are flirting with their high since the July 2015 IPO but *we still see upside* as the sponsor executes on its pipeline. The wind exposure removes an Achilles heel of the previous all solar strategy in the face of a 2017 Investment Tax Credit (ITC) step-down to 10% from 30%. We suspect all premium YieldCos will inevitably prove multi-technology.

### Capitalizing on the carbon code: investors missing carbon reg implementation

With many myopically focused on ITC expiration at end of 2016, we see many failing to discuss implications of finalization of 111(d) EPA regulations regulating carbon – driving significant procurement activities *through* the decade. Additionally, we expect utilities to play a greater role – such as Dominion and Southern, which already have sizable renewables portfolios and appear poised to announce YieldCo partnerships.

### Valuation: Initiate with Buy rating and \$38 PT; our best valued YieldCo

[Valuation](#) is based on applying a 6% yield to 2018E dividend per share (DPS). We give credit for the probability weighted pipeline including backlog (~5GW for SUNE and First Wind). We see upside to ~\$45 if TERP can narrow the gap with NEP's premium yield.

## Equities

Americas  
Electric Utilities

**12-month rating** **Buy**  
*Prior: Not Rated*
**12m price target** **US\$38.00**  
*Prior: -*
**Price** **US\$34.73**
**RIC:** TERP.O **BGG:** TERP.US

### Trading data and key metrics

<b>52-wk range</b>	US\$35.02-0.00
<b>Market cap.</b>	US\$1.88bn
<b>Shares o/s</b>	54.2m (COM)
<b>Free float</b>	87%
<b>Avg. daily volume ('000)</b>	264
<b>Avg. daily value (m)</b>	US\$8.8
<b>Common s/h equity (12/15E)</b>	US\$0.67bn
<b>P/BV (12/15E)</b>	3.1x
<b>Net debt / EBITDA (12/15E)</b>	6.4x

### EPS (UBS, diluted) (US\$)

	12/15E			
	From	To	% ch	Cons.
<b>Q1E</b>	-	(0.13)	-	0.06
<b>Q2E</b>	-	0.03	-	0.17
<b>Q3E</b>	-	0.09	-	0.11
<b>Q4E</b>	-	0.22	-	(0.04)
<b>12/15E</b>	-	0.23	-	0.30
<b>12/16E</b>	-	1.05	-	0.74
<b>12/17E</b>	-	0.76	-	0.67

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Highlights (US\$m)	12/12	12/13	12/14	12/15E	12/16E	12/17E	12/18E	12/19E
<b>Revenues</b>	16	17	126	486	687	882	1,476	1,935
<b>EBIT (UBS)</b>	5	5	7	189	300	397	706	930
<b>Net earnings (UBS)</b>	1	0	(73)	14	79	129	263	368
<b>EPS (UBS, diluted) (US\$)</b>	0.03	(0.01)	(1.44)	0.23	1.05	0.76	1.14	1.34
<b>DPS (US\$)</b>	0.00	0.00	0.27	1.30	1.53	1.90	2.28	2.61
<b>Net (debt) / cash</b>	(106)	(436)	(1,130)	(2,324)	(3,295)	(4,166)	(7,007)	(9,124)
Profitability/valuation	12/12	12/13	12/14	12/15E	12/16E	12/17E	12/18E	12/19E
<b>EBIT margin %</b>	33.8	29.3	5.7	38.8	43.7	45.0	47.8	48.1
<b>ROIC (EBIT) %</b>	-	1.8	0.5	5.5	6.2	6.6	8.4	8.1
<b>EV/EBITDA (core) x</b>	-	-	-	13.3	11.1	10.0	7.5	5.8
<b>P/E (UBS, diluted) x</b>	-	-	-	NM	33.1	46.0	30.4	26.0
<b>Equity FCF (UBS) yield %</b>	-	-	-	(82.7)	(64.2)	(48.1)	(183.9)	(110.0)
<b>Net dividend yield %</b>	-	-	-	3.7	4.4	5.5	6.6	7.5

Source: Company accounts, Thomson Reuters, UBS estimates. UBS adjusted EPS is stated before goodwill-related charges and other adjustments for abnormal and economic items at the analysts' judgement. Valuations: based on an average share price that year, (E): based on a share price of US\$34.73 on 27 Feb 2015 19:38 EST

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# Investment Thesis

## TerraForm Power, Inc.

### Investment case

We are initiating coverage with a Buy rating and \$38 Price Target. TerraForm Power (TERP) is SunEdison's (SUNE) dividend growth-oriented vehicle which the sponsor intends to drop its contracted solar and wind assets into. TERP focuses on assets in the US, EMEA, and Latin America. Additionally, TERP is active in third-party M&A and has completed three deals since the July 2014 IPO, most notably 521MW from First Wind. As of the First Wind deal, SunEdison and First Wind had visibility into 10.7GW of conversion-weighted renewable assets with 4.5GW in its pipeline and backlog.

### Upside scenario

Our upside scenario is premised on SunEdison and First Wind's successful development efforts which facilitate a strong pipeline of assets for TerraForm. If management executes on its currently identified pipeline and backlog and is able to trade at a 5% yield, we see upside to \$45. In a scenario with value ascribed to leads and qualified leads, shares could be worth ~\$51 at a 5% yield.

### Downside scenario

We see downside to shares if the sponsor is not able to develop assets consistently in the future. In such a scenario the yield could widen 200bp, thus reducing value to \$25 due to the discounted yield and lower CAFD.

### Upcoming catalysts

2H15	Financial update on Just Energy Solar
Mid-2015	Launch of SUNE EM YieldCo
2015	Next SunEdison Drop Downs
2015	Updates on US/Chinese trade disputes

12-month rating

**Buy**

12m price target

**US\$38.00**

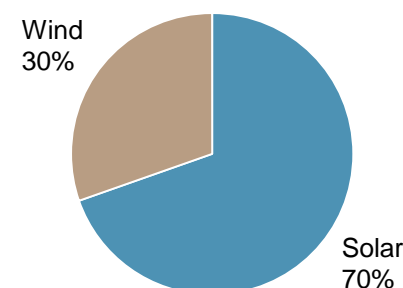
### Business description

TerraForm Power (TERP) is a dividend growth-oriented company (YieldCo) formed to own and operate contracted clean power generation assets acquired from SunEdison and unaffiliated third parties. The business objective is to acquire high-quality contracted cash flows, primarily from owning solar generation assets serving utility, commercial, and residential customers. The November 2014 acquisition of FirstWind adds primarily wind assets in the Northeast US and Hawaii. FirstWind also adds expertise in wind and a development pipeline. The visible drop-down pipeline is 70% solar and 30% wind.

### Industry outlook

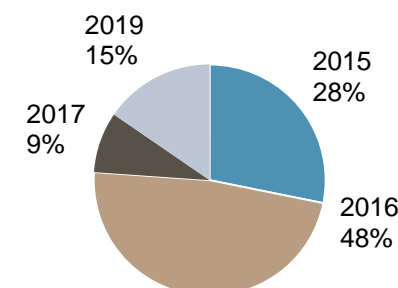
The electric utility industry is projected to experience weak or negative electric demand growth in coming years as a tepid economy and energy efficiency dampen demand. In the unregulated merchant power space, we see limited potential for a meaningful recovery from currently low power prices due to limited projected demand growth, growth of subsidized renewables, and potential for only modest further retirements. At regulated utilities, we believe rising interest rates and robust valuations are a challenge to the sector, particularly as earnings growth stalls once EPA-mandated growth CapEx slow mid-decade. We expect cost-cutting and strategic planning to be a key theme across both regulated and competitive companies, with M&A at modest (at best) premiums designed to extract cost synergies

### Visible Drop Down Pipeline by Technology Type (%)



Source: Company Filings

### Visible Drop Down Pipeline by COD (%)



Source: Company Filings and UBS Estimates

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# Executive Summary: YieldCo Best Value

**We are initiating coverage on TerraForm Power (TERP) with a \$38 Price Target and Buy rating.** TERP might have been later to the YieldCo party than its utility brethren but we see the most upside at TERP versus the other two YieldCos we cover (NextEra Energy Partners [NEP] and NRG Yield [NYLD]). TERP has a much higher level of developmental risk as it lacks a pre-build inventory of assets in its 'pipeline' but we believe the substantially elevated yield and higher growth more than compensates for this uncertainty. NEP is still the measuring stick that we compare all YieldCos too given its multi-year inventory of operational assets that can be dropped in. TERP falls short in comparison today but it is not difficult to envision a scenario where SunEdison (SUNE) is successful in translating its growth propositions into operating assets. Just taking its pipeline and existing backlog largely achieves ~4-years of growth, suggesting the outlook is less risky than perceived (backlog and pipeline and have ~signed contracts). We emphasize that given SUNE's tactical shift to distributed generation (DG) resources, which largely don't have sufficient development visibility to qualify for its pipeline, *we're biased to see SUNE exceed its near-term development targets.*

In comparison, NRG Energy and NRG Yield still have a solid runway of assets to drop-down and are actively looking to enhance it with conventional generations and distribution generation solar – it lacks the same scale development engine as SUNE. We do not believe that TERP deserves to trade at a yield as wide of NYLD as it does – and is likely to eventually converge as NYLD's growth slows relative to its slower development efforts. Closing this gap offers a clearer path to value uplift.

On a longer-term basis, execution momentum will solidify TERP as a top-tier YieldCo (now with solar and wind post-First Wind deal) and keep its cost of capital low into the future. We expect more renewable assets will be available for sale towards the end of the decade when we expect P/E oriented regulated utilities to divest their renewables as the tax lock-ups expire. Utilities such as Dominion Resources, Southern Company, and Duke Energy have sizable renewables portfolios but in our opinion each independently lacks the scale to launch their own YieldCo. The easiest solution is to partner with an existing YieldCo to form a right-of-first-offer (ROFO) partnership. We suspect TERP will take part in such deal making too. While recent transactions in the YieldCo space have focused on operating assets, we anticipate future deals to lock-up development companies will actually address and complement TERP well in order to provide continued long-term growth for utility-scale ideas.

**For added background, below are recent notes on YieldCos and SunEdison:**

[2/4/15 The Next YieldCo: Charting New Waters](#)

[1/9/15 SUNE: PTC Wind Turbine Purchase Highlights Aggressive Plans](#)

[7/24/14 Expanding Horizons for the YieldCo Structure](#)

**We also link to other recent solar sector reports:**

[Background on Tax Equity Matters – How much does it cost ?](#)

[BNEF's take on the solar outlook – US capacity and cost trends](#)

[DG Policy outlook with SunRun - Weighing in on net metering](#)

[The US Solar Policy outlook with SEIA – ITC and trade prospects](#)

[How Cheap can Solar Get? NREL's Take – Why are costs coming down?](#)

[Cracking the Carbon Code – Thoughts on 111\(d\) compliance at NARUC](#)

[NRG: Picking Apart the Solar Opportunity – The Economics of Solar DG](#)

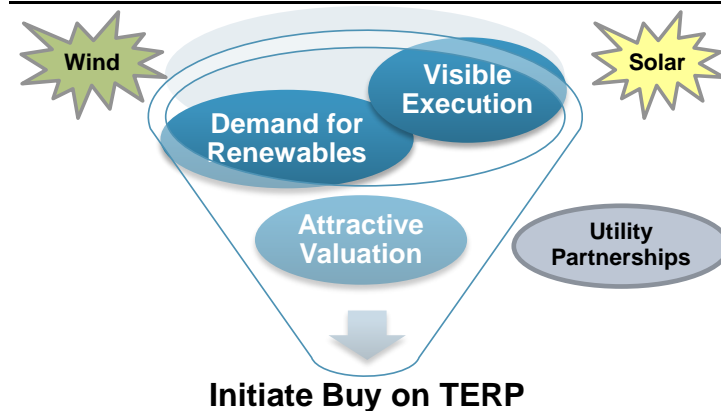
TERP cannot take the crown as highest quality YieldCo from NEP (at least today) but appears to offer more upside given the higher degree of development risk.

On a 2017/2018 basis we look for the yield to tighten vs peers.

Being a top YieldCo will unlock more partnering opportunities in a few years' time.

# Investment Thesis: Three Reasons to Buy TERP

Figure 1: TerraForm is Well Positioned in Renewables Space



Source: UBS

## Why buy TERP today?

1. Short-term development pipeline has high probability of success
2. Intermediate-term growth supported by continued strength in renewables *even without* strong tax incentives
3. Valuation today supports upside ~10% just from converting the visible pipeline and backlog

## [Click here to jump right to the valuation](#)

### Reviewing the TERP Value Proposition:

#### (1) Visible execution via announced drop-downs and backlog:

SunEdison's current pipeline of projects will enable a 19% DPS CAGR at TerraForm from 2015-2019 (24% from IPO). The question of future growth remains predicated on the ability for SUNE to continue to develop projects to 'feed' into the structure alongside its growing size. We see SUNE as well positioned, particularly with its First Wind deal to source wind and solar deals both in the US and abroad to enable continued execution. Lastly, the size of SUNE's pipeline relative to the 'conventional' backlog seen for many utility-scale developers and MLPs understates the opportunity as distributed generation only 'appears' within the backlog within six-months of completion, suggesting structurally higher realization of MWs relative to the forecasted backlog.

Execution at SUNE will enable visibility to future drops –

Successful expansion into new strategies for SUNE will be key to success

#### (2) Demand growth is *better* than many anticipate – carbon coming.

Renewables, including solar, have a very bright future in the US and elsewhere under the guise of carbon mandates. Many investors have been too myopically focused on the near-term expiration of the tax credits to appreciate the groundswell of regulatory concern, providing support for continued utility-scale and DG procurement of solar beyond the 2017 ITC step-down. Similarly wind build expectations will be driven by the same dynamic. Moreover, oil is not as relevant as many investors assume, with little penetration existing already in markets that remain 'economic' for solar. This is a 'long-term' opportunity argument, rather than impacting the existing size of the pool of economics today.

We're less nervous about ITC expiration given nascent datapoints on carbon regs in US

#### (3) Valuation is compelling, trading wide of contracted peers on 2017E

With TERP trading at a ~5.6% yield, vs. NYLD at the ~4.6% mark, and NEP at ~3.6%, we see TERP as already meaningfully discounting the development opportunity within shares. As the SUNE strategy of global partnerships is fully fleshed out in coming months, we suspect greater confidence in its model will enable TERP to eventually be compared against high DPS growth peers like DM,

Execution at SUNE will garner appreciation for high DPS growth, discounted vs. peers

MPLX, PSXP, EQM and NEP under the best of cases. Our target priced embeds an implied 3.4% yield on 2015 dividend, largely consistent with NYLD at 3.3%. TERP currently trades at a ~3.8% 2015E yield. While the ~20% DPS growth promised is appealing, it's really the improving visibility around future drops that will enable the tighter yield. SUNE's Analyst Day only emphasizes there are still other angles yet to be pursued to ensure adequate development to achieve its stated targets. Meanwhile NYLD itself doesn't compare in the scale and diversity of SUNE's development efforts in both wind/solar.

#### **(4) A value kicker: more third-party partnerships and acquisitions**

If nothing else, the YieldCo vehicle will serve to consolidate the renewable sector, with TERP's advantaged cost of capital serving as among the pre-eminent platforms for assets to be eventually dropped. We suspect other portfolios of operating assets (like Atlantic Power's wind business) could yet come to market and offer accretive opportunities for YieldCo sector, with those with the tightest equity yields able to win the bids. This becomes a self-fulfilling prophecy, as TERP's success begets greater success.

**Acquisitions and partnerships still on the come**

Meanwhile, development partnerships are likely to become a greater focus for TERP as it seeks to firm up its growth domestically and abroad. Specifically, we see a credible argument for TERP to partner with large-cap US utilities to enable the drop of their own eventual renewable assets into the entity, improving the sustainability of the drop-downs into the structure.

#### **(5) What are the primary risks to the story? Development.**

It is not all gravy. Many MLP stories strive to have more limited exposure just to capital markets and execution risk around drop-downs, while TERP today certainly has an element of development risk baked into its above-average yield. We see the development risk as calculated given its wide yield versus peers, but also quite achievable given the attractive economics of both

**TERP has more risk than the average YieldCo but we view the risk/reward favorable.**

## Who is SunEdison and Why Can They Execute?

We detail the relationship between TerraForm and its sponsor in the [Ownership](#) section but provide a snapshot below as it is critical to understand the sponsor to grow comfortable with SUNE's ability to execute. We present three key facts why

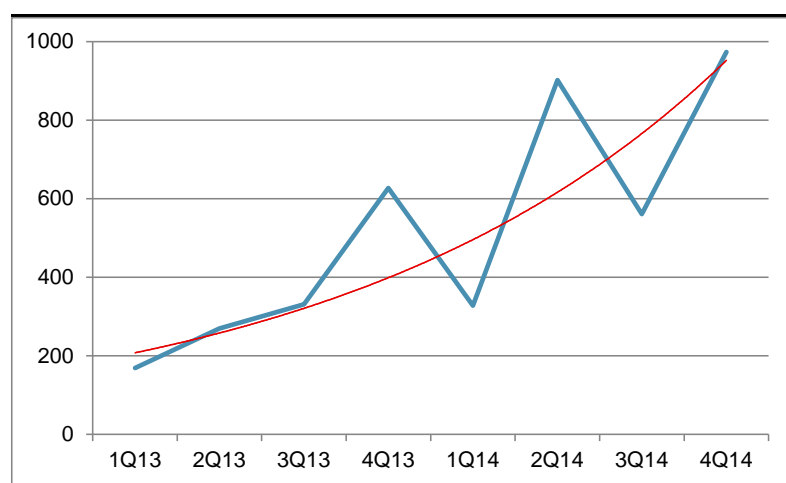
**(1) A top manager and developer of renewables:** SunEdison currently manages 5GW of renewable assets, up from ~2GW in 2013 and representing a 100% 2009-2014 CAGR. In contrast NextEra operates 12.1GW of renewables at NextEra Energy Resources which includes the 1.2GW in its YieldCo. NRG Energy owns 2.3GW of renewables in addition to 1.4GW at NRG Yield (operated by NRG Energy and 55% owned). SUNE also consistently ranks as a top five solar installer among integrators with 1,048MW installed in 2014, up sharply from 432MW installed in 2013.

Bottom line is SUNE consistently ranks among the top installers of solar globally.

**(2) Track record of conversions:** It is easy to be cautious given the magnitude of the market opportunities that SunEdison discusses (10x greater than the 5GW managed today) but the company has shown success in converting the low probability prospects into completed assets. In the past year SUNE has been able to add an average of ~700MW per quarter to the pipeline (asset near a PPA) and backlog (assets with a PPA); this is up from an average of 350MW per quarter in 2013. Furthermore, we conservatively do not include the leads/qualified leads in our valuation as they are unlikely to materialize.

Conversion guidance does look overly optimistic given the track record.

Figure 2: Quarterly Additions to Pipeline and Backlog



Source: Company Filings (4Q Pre-First Wind)

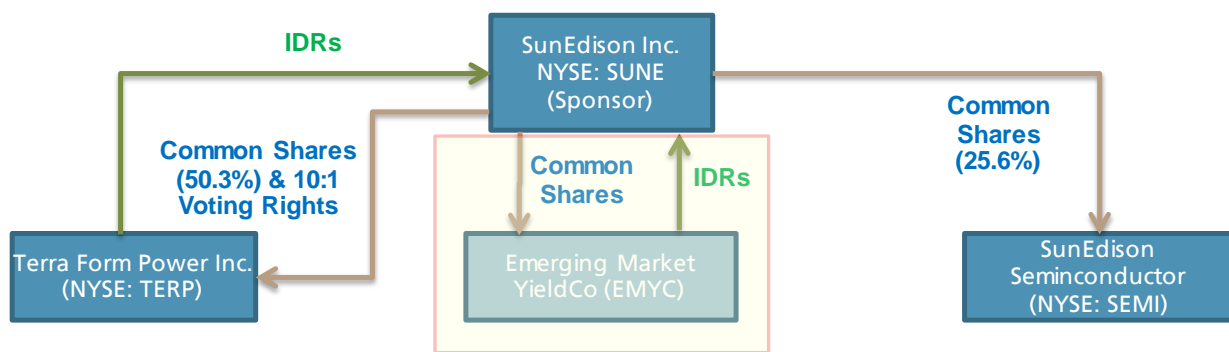
Over the past two years SUNE has been able to add 175MW per month to its pipeline (near PPA) and backlog (PPA).

The growth in capacity does not come at the expense of returns or quality as SunEdison detailed out its underwriting requirements for projects at its 2015 Analyst Day:

- Cash yield and levered IRRs: 9%+
- Unlevered IRR: 7%+
- Contract lives: At least 15 years

**(3) Vertical integration and intellectual property:** On the component cost side SunEdison's supply chain benefits from poly and crystal cost advantages which improves product economics. This is becoming a less important part of the story but helps TERP to achieve the 9%+ cash yields on projects.

Figure 3: SunEdison Simplified Organization Chart (EM YieldCo pending)



Source: Company Filings

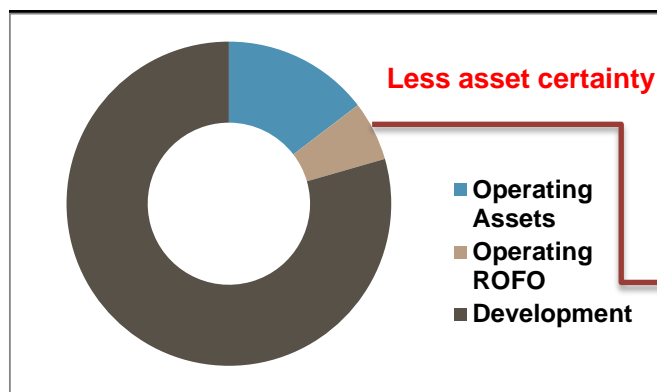
## Execution on wind/solar is more vital for TERP than peers

Unlike NEP, NYLD, and other YieldCos which we believe have more static fundamental valuations (trading volatility aside), SUNE does not have a deep bench of drop-ready assets. What SUNE lacks today it makes up for with potential that we do not believe is being adequately priced by the market today. For example the conversion-weighted pipeline and backlog for SUNE jumped to 3.8GW from 3.2GW at 3Q14, value that largely accrues to TERP. SunEdison needs to continue converting its leads into operational projects to drop into TerraForm as there is a much smaller asset base that is operational and 'ready to go' for SUNE to sell to TERP. As we detail below, **only ~15% of the visible CAFD for TERP is in the entity today, in contrast with ~45% for NRG Yield**. Furthermore only ~5% of the of the potential drop-down CAFD is from currently operational assets (CAFD from assets on SunEdison balance sheet), whereas NRG Energy has an inventory of operating assets it can drop-down that is 4x greater. This gives TERP a thinner buffer against development hiccups.

Shares continue to perform well in the short-term as the sponsors execute on developing the pipeline.

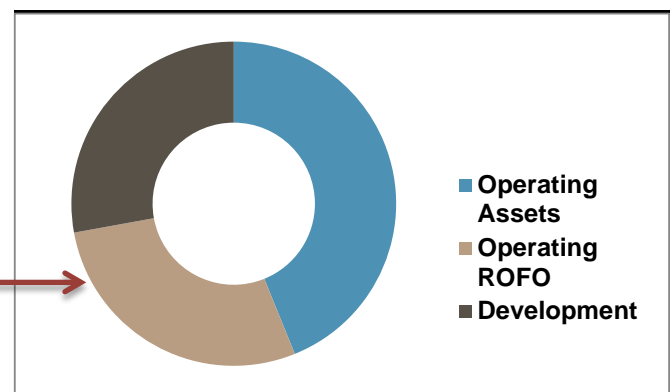
The flipside of this equation is that TerraForm has more incremental opportunity

Figure 4: TERP % CAFD Visibility



Source: Company Filings and UBS Estimates

Figure 5: NRG Yield % CAFD Visibility



Source: Company Filings and UBS Estimates

## Defining the near-term drop downs

As shown below, SunEdison and First Wind each have a large inventory of identified assets that are strong drop-down candidates for 2015/2016 which significantly reduces the near-term development risk for TERP. As we have emphasized there is naturally developmental risk but with the nature of solar development in particular there tends to be a lower level of risk. For example, with hundreds or thousands of individual solar panels the risk of any one defective part

Despite not having a pre-build inventory of assets, solar tends to have lower construction risk due to the modular design.



impacting the asset is diminished. In contrast conventional power facilities have much larger dollar-value components that are critical to development. For example, the delays on certain milestone nuclear components have significantly delayed the timeline for SCANA's (SCG) ongoing nuclear development. Quite simply, the risk is much more distributed and easier to manage on these projects.

**Figure 6: Visible SunEdison Projects**

Visible Drop Down Pipeline Sun Edison Project	As of January 2015 COD	Type	MW
Ontario 2015 Projects	2015/2016	Solar	16
UK Projects #1-13	2015	Solar	179
Chile Project #1	2015	Solar	42
US DG 2015 Projects	2015	Solar	119
Chile Project #2	2016	Solar	94
US AP North Lake I	2015	Solar	24
US Bluebird	2015	Solar	8
US River Mountains Solar	2015	Solar	18
US Kingfisher	2015	Solar	7
US Western Project #1	2016	Solar	156
US Island Project #1	2016	Solar	65
US Southwest Project #1	2016	Solar	100
US Utah Project #1	2016	Solar	163
US California Project #1	2016	Solar	55
Tenaska Imperial Solar	2016	Solar	73
US California Project #2	2016	Solar	46
US DG 2016 Projects	2016	Solar	55
US California Project #3-4	2016-2019	Solar	516
<b>Total</b>			<b>1,736</b>

Source: Company Filings and UBS Estimates

**Figure 7: Visible First Wind Projects**

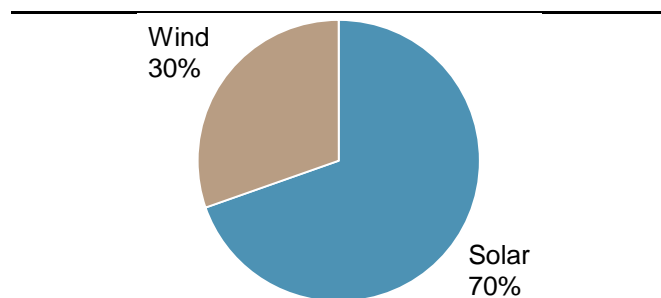
Visible Drop Down Pipeline FirstWind Project	As of January 2015 COD	Type	MW
Mililani Solar I	2015	Solar	26
Seven Sisters	2015	Solar	23
Kawailoa Solar	2016	Solar	65
Waiawa	2016	Solar	61
Mililani Solar II	2016	Solar	20
Four Brothers	2016	Solar	400
South Plains	2015	Wind	200
Oakfield	2015	Wind	148
South Plains II	2015	Wind	150
Bingham	2016	Wind	185
Hancock	2016	Wind	51
Weaver	2017	Wind	74
Rattlesnake	2017	Wind	62
Route 66 II	2017	Wind	100
Bowers	2017	Wind	48
<b>Total</b>			<b>1,611</b>

Source: Company Filings and UBS Estimates

As of January 31, 2015, TERP had 1.5GW of operating assets and has guided to 2.1-2.3GW for 2015, a 700MW increase. The majority of the 3.3GW asset visibility is expected to reach commercial operations by the end of 2016 with ~950MW in 2015 and 1,600MW in 2016. In sum, the identified projects in the next two years provide confidence in management's ability to achieve the distribution guidance.

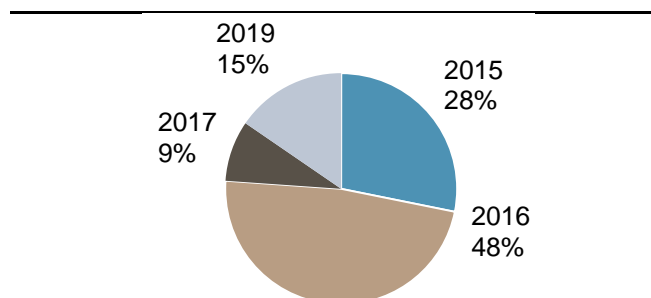
2017+ is the question.

**Figure 8: Visible Drop Down Pipeline by Tech. Type (%)**



Source: Company Filings

**Figure 9: Visible Drop Down Pipeline by COD (%)**



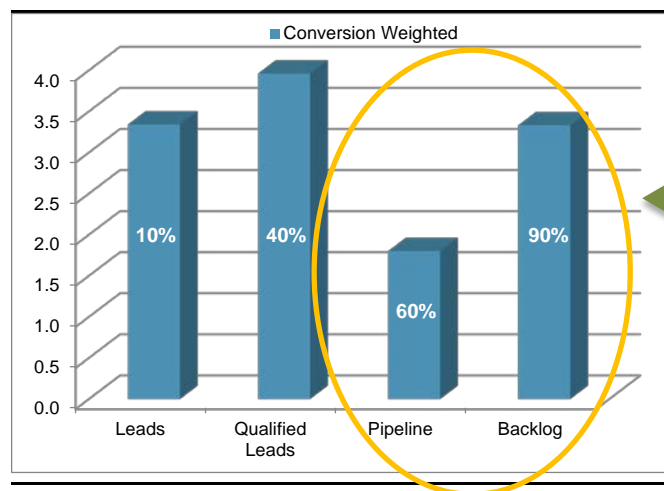
Source: Company Filings and UBS Estimates

## Basic backlog Projections arrive at dividend growth already

We discuss the outlook for the industry in the subsequent section but as we focus on TerraForm Power, the long-term outlook will be influenced by the sponsor's abilities to execute on its developmental aspirations. We elaborate on the macro factors driving continued renewables development in the YieldCo industry. The pipeline and backlog have the highest probability of success but SunEdison will

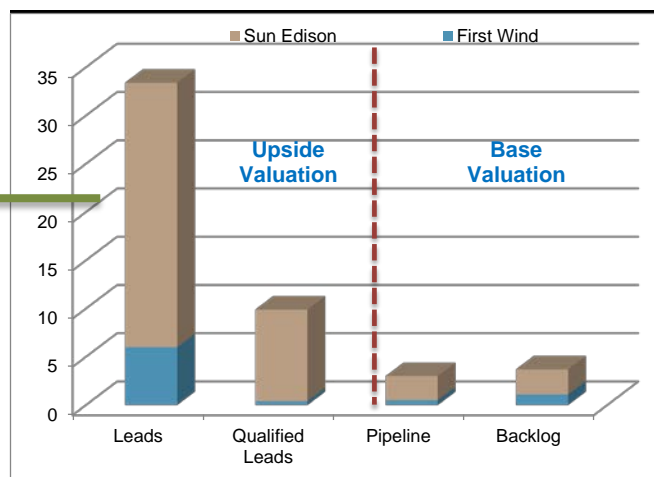
have to execute beyond just 2016 to prove its sustainability; macro tailwinds will help. **We only include the first two, most certain, buckets of growth in our projections.**

**Figure 10: Conversion Weighted MW: SUNE and First Wind as of First Wind deal**



Source: Company Filings

**Figure 11: Gross MW: SUNE and First Wind Conversion as of First Wind deal**



Source: Company Filings

## And how does this jive with our drop-down assumptions?

We include a year-by-year drop-down assumption to derive our dividend growth assumptions. We include the breakdown below by MW type and projected CAFD.

**Figure 12: ROFO and CAFD Asset Breakdown vs guidance**

ROFO Assets	FY14	FY15	FY16	FY17
<b>Capacity (MW)</b>				
Total US DG	263.0	613	957	1,057
Total Solar - US Utility	613.1	759	1,070	1,482
Total Solar - UK Utility	161.8	323	323	323
Total Wind - US Utility	468.9	675	858	1,443
<b>Total Capacity</b>	<b>1,507</b>	<b>2,371</b>	<b>3,209</b>	<b>4,306</b>
<b>Distributable Cash Flow and Coverage Analysis</b>				
Total (amounts in \$M, except per unit amounts)	FY14	FY15	FY16	FY17
Adjusted EBITDA	\$71	\$374	\$547	\$698
Estimated cash available for distribution		\$214	\$299	\$402

Source: Company Filings and UBS Estimates

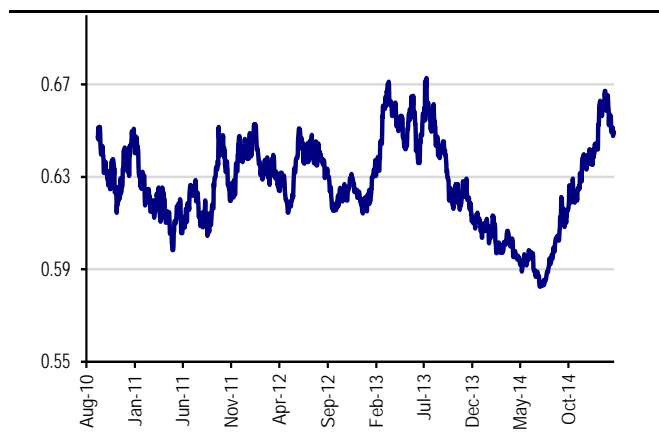
## Framing the Risks – Getting Paid in Yield

### What are the risks?

- **Foreign country risk:** Some of the countries have high levels of inflation but the PPAs are not indexed and UK PPAs are only fixed for ~four years. Other foreign currency exposure includes the Chilean Peso but the related PPA is denominated in USD with semiannual inflation indexing. The weakening Peso is an issue as it makes the mines operations less competitive.

**Weakening GBP is a concern**

Figure 13: USD-GBP F/X



Source: FactSet

Figure 14: USD-Chilean Peso F/X



Source: FactSet

- **Developmental risk:** The risk is indirect for TERP but this YieldCo faces significantly more developmental risk than the likes of NextEra Energy Partners as TERP's sponsor lacks the same breadth of developed projects. Even the visible drop-downs at SunEdison have largely not met their COD. In the near-term TERP is somewhat insulated with the Project Support Agreement (PSA) (i.e. making CAFD fungible in the near-term). We detail out the PSA later in the note but it essentially offers a specific dollar target for drop-down cash rather than just a list of target assets. On a longer-term basis SunEdison will have to enhance the transparency of the pipeline, particularly in 2017 and beyond as there is only 800MW of identified projects in the visible drop down pipeline in the out years.
- **Operational risk:** As we detail in the First Wind portfolio later in the note, despite having PPAs we have some concerns about assets in the portfolio. For example, approximately half of the First Wind assets by nameplate capacity (230MW) utilize turbines made by Clipper which are no longer under warranty. At TERP the CMP (Compania Minera del Pacifico) asset is a 101MW solar facility which supports an iron ore mine. Although the contract is for below-market power, this is another higher risk investment relative to traditional US renewables.
- **Volatility in REC market:** Unlike Production Tax Credits, Renewable Energy Credits (REC) are traded in the secondary market and are subject to volatility. Due to First Wind's concentration in New England and the northeast US in general there is a concentration of REC exposure at the largest assets including Cohocton, Rollins, Stetson I, and Mars Hill.

SunEdison's ability to build new renewables in line with its historical success is the primary issue that TERP investors need to gain comfort with.

Operational risk appears higher for some of the TERP/First Wind assets than other peers.

#### Why solar this time is not your father's Calpine or legacy '08 solar play.

In contrast to prior iterations of solar development in the '08/'09 period and development of conventional generation with Calpine and others in the early 2000's, the economics are substantially more attractive – and typically complemented with contracts that embed 20-year PPA structures.

- *What's different from the big IPP wave in the 2000's?* Calpine and others largely developed these projects at the time on a merchant basis on the promise of deregulation. In the current instance the renewables are being developed under long-term firm contract, typically accompanied with 20-year visibility on both utility-scale and distributed deals. *The cautionary tale here*

Development businesses sound scary to those familiar with the early 2000 IPPs but today's renewable development has an entirely different profile that reduces the risk.

*largely relates to failed promises around wider industry deregulation. The analog here is commitment to net metering policies, which we do not see as going away unless growth proves unsustainable.*

- *But what about previous international development by the IPPs?* In the early 2000's, Enron and others attempted to build out power generation abroad. Their efforts largely failed. What's different this time? Here too, we emphasize the nature of solar contracts are more diverse, likely across a wider base of distributed counterparties. The scale of conventional IPP development typically involved large-scale generation, with contracts in many instances underwritten by government off-takes but fundamentally above-market. *The analog would here would be to be wary of substantially above-market schemes instituted in certain markets as Feed-In Tariffs (FITs) or the like. Given the high (or even moderated price of oil), economics of solar appear to be largely competitive, particularly on mid-to-large scale deals.*

'Bite-sized' projects provide significant diversification benefits in foreign markets, removing concerns around 500MW+ fossil plants in one market. Essentially SUNE takes lots of small bets versus peers like AES.

#### ***And what of the risks around the solar industry itself?***

- **Tackling the ITC expiration risk head on; Carbon is the offset**

We maintain our view that while the step-down of the ITC could slow development of utility-scale deals and encourage greater competition from utilities themselves, the nascent prospect of carbon regulations in the US is a major positive offset, structurally under-appreciated by the bulk of investors in the story who have been focused on declining costs rather than shifting policy environment. Carbon regulations could well translate to meaningful (albeit informal) increases to existing state-level Renewable Portfolio Standards.

Delineation of state level plans for RPS increases could begin as early as 2015. Look to Michigan as an example.

- **Distributed generation: net metering reform will only moderate growth**

Turning to the distributed proposition, we suspect regulators in the US *will not* follow Europe's lead in pulling back subsidies to quite the same magnitude, with net metering tariffs seemingly here to stay (rather, increases in fixed tariffs should moderate the pace of deployment to stable levels rather than allowing an asymptotic adoption of the technology across all geographies). For those insular to the solar world, we see DG reform (which is inevitable) as perhaps the most immediate 'risk' to the prospects of solar with its current investor base. That said, without any residential leases in the TERP structure today, this remains simply a question of future growth (outside of anything contemplated in SUNE's drop-down schedule).

- **Why Oil is *not* a big issue either: addressable market is huge despite pullback.**

Why is the decline in oil not a primary concern? While many investors appear to be caught up in the argument around the 'marginal' opportunity for solar, we believe the real focus should be on rate of penetration among those eligible for solar today. The US market share for instance is entirely de-linked from oil, despite continued viable economics for solar. We see comparable arguments as available in other OECD countries, particularly for smaller scale projects at the Commercial and Residential scale, where net metering subsidies matter *more* than the alternate fuel cost. Further correlation data is available later in the report [[click here](#)].

With the US opportunity unaffected by oil, how can the pullback be that meaningful?

# 1. Why First Wind is a Win-Win

The recently closed First Wind acquisition significantly bolsters TERP by not only enhancing the accretion profile and providing more visibility into the pipeline but also by diversifying the asset base. First Wind's competitive advantage is the ability to get permits, interconnections, etc. secured, thus it focuses on non-traditional markets which are not entirely dependent on who has the lowest cost of capital. This core competency will only be enhanced now that it has access to TERP currency.

- **First Wind deal underscores our confidence in management:** Perhaps more than any other deal thus far, we see this deal as addressing the underlying need for SUNE and TERP to diversify into alternate sources of renewable growth to feed TERP growth. We continue to see wind, at least in the US, as the larger market for now – and likely into the future as the fundamental economics (LCOE) is more competitive than solar. To the extent that solar and wind markets are complementary (wind is more of a New England and Midwest resource), this will enable SUNE/TERP to expand to other areas of the US.
- **The current backlog and pipeline does not include incremental development from the 1.6GW of PTC-qualified projects through 2016:** In January SUNE announced that it secured 1.6GW of incremental PTC eligible wind turbines, increasing the total PTC/ITC eligible backlog/pipeline to ~3.0GW. Peers such as NextEra Energy also likely participated in the annual rush to secure equipment but this is new for SUNE with its First Wind exposure. At the end of December Congress passed a tax extenders bill granting an extension of the PTC safe harbor for wind assets, providing a two-year development window with assets grandfathered. A supply of PTC eligible assets with the \$0.023/KWh tax credit is a vital component for the compelling economics in wind, particularly true in the high cost regions which First Wind specializes (Northeast and Hawaii).

Economics of wind are better than solar: Given the robust economics (and declining costs to as low as ~\$1,300/kW under the cheapest deals we've seen) we remain exceptionally constructive on near-term development of renewables in the US, with capacity factors of >50% achievable in certain geographies across the US. We would expect management to announce incremental wind awards through 2015 off these qualified assets.

Further details are available in our note, [SUNE: PTC Wind Turbine Purchase Highlights Aggressive Plans](#).

- **In the near-term, we continue to see the Northeast as an ideal wind starting point to build out:** The New York and New England states have meaningful capacity left prior to hitting RPS targets. We suspect First Wind will remain the premier developer in the Northeast for states like CT and MA, delivering large-scale projects. We also flag the relatively higher cost of development to build in the region and meaningful NIMBY pushback creates both meaningful barriers to entry for many (NEE has historically not developed in this market for instance) alongside creating robust cash flow PPAs for those successful in their efforts (new PPAs are still in the \$90's+/MWh). First Wind is also working on solar/wind projects in Hawaii and Utah among other states – highlighting that First Wind is not just a 'one-trick' pony..

Wind assets filled a glaring gap for SUNE. Expanding into More than Just Solar

Fall/Winter cash flow profile of wind (1Q/4Q) complements that of Spring/Summer solar (2Q/3Q).

First Wind may be one of many with large supply agreements coming through on the back of PTC eligible assets.

Wind exposure separates TERP from comparisons with planned FSLR/SPWR YieldCo.

▪ **The question after First Wind deal is whether more platforms needed?**

Our key question remains whether management will need to pursue additional development teams and assets. While initial indications from management downplay this need, we would not be surprised to see further meaningful bulking out of the First Wind team to feed future growth projects, if not via acquisitions, at least organically. We look for the deal teams to focus on incremental opportunities for development both pre & post ITC in the US across the Plains/Midwest states.

- **Leveraging this deal into a global wind platform:** Notable from the recent earnings call is managements' willingness to leverage the First Wind deal into a global development platform. We see wind development as fundamentally 'local' with greater barriers to entry than solar development. The know-how of the First Wind team is among the best and we expect expansion both elsewhere in the US and within the Organization for Economic Co-operation and Development (OECD) world [[member countries are available here](#)]. We suspect *global* wind development efforts could take a bit to materialize, but offering a multi-pronged solution to customers is an obvious synergy.

- **So what is needed?** Focus on wind execution. We look for management to leverage the platform to deliver deals on its new platform. We attribute recent outperformance as largely due to growing investor comfort with a focus from TERP/SUNE *outside* of the core solar focus previously harped on. Given the magnitude of wind opportunity in the US, we reiterate the economics remain quite appealing.

While a bit of a stretch, this is the long-term promise

## 2. Carbon Policies Keep Renewables Shining Bright

### The Advantage of a Utility Angle on Solar Stock

*If there is any way to differ our approach to this story versus sell-side peers, we emphasize our utility-bias places a greater focus on the demand side – and opportunity set for not just solar, but renewables of all flavors. We suspect many investors hereto have been largely focused on the declining cost curve (which has been admittedly been impressive), but suspect a greater focus on the industry penetration opportunity is warranted following the proposed carbon reforms.*

The declining cost is just part of the story – investors should avoid getting lost in the forest and missing the trees.

### Investors are Missing Regulatory Puzzle: Carbon

What's the biggest opportunity before the solar industry? Carbon regulation and implementation of 111(d) regs. We are surprised that rhetoric in the industry continues to avoid this focus as this appears to be the single most important driver in long-term renewable procurement, providing an outlook, particularly for utility-scale deals beyond the current 2017 ITC 'cliff' over which many investors continue to panic. We flag many utilities and regulators of late have continued to indicate a willingness to contemplate ratable procurement *beyond* the ITC expiration. Dominion, Southern Company, and Xcel Energy have all indicated explicitly and implicitly such plans. While historically addressing climate change meant embracing nuclear all the more, with the decline in the cost curve of renewables, we see a step-change improvement in the outlook for renewables to address the forthcoming carbon targets both in the US and globally.

Long-term demand is quite intact beyond tax credits expiration

Investors have myopic view of renewables cliff

## Taking the story abroad? Focused on the OECD Countries.

While some might fret that the 'biggest' nominal opportunities for solar remain *outside of the US – and OECD countries—given the high cost of emerging market (EM) – we see the safety and significant build opportunity within the OECD as more than enough to satiate the appetite of YieldCo entities such as TERP. We suspect repatriation of taxes from distributions abroad will also require a balance with domestic assets in order to limit any eventual taxable income to the entity. We continue to expect the US to be the core of TERP's development efforts, with European (UK), Australian, Chilean, and Japanese assets complementing the bulk of the delta.*

**Oil (and in turn LNG) does impact global solar story, but here too – net metering and carbon drive solar**

## 3. Fastest Growing YieldCo: Trading at a Discount

### Following First Wind deal, TERP now has highest growth

TERP's 19% distribution CAGR (24% from the IPO) is the highest target of the YieldCos and we believe that management will have to execute on a series of drop-downs and show the market developmental success before it receives full credit for its growth rate with a lower yield.

**The market appears to be discounting TERP's high growth rate.**

- **RNW-CA:** No explicit target; 3% DPS growth since IPO
- **PEGI:** 10-12% Three-Year CAFD CAGR
- **ABY:** 20-25% DPS growth in 2016; low double-digits long-term target
- **NEP:** 40-50% in 2015 to high IDR splits; 12-15% from 2016-2020
- **NYLD:** 15-18% Five-Year DPS CAGR
- **TERP:** 19% DPS Five-Year CAGR (2015-2019)
- **FSLR/SPWR:** *Stay tuned (joint YieldCo announced in late February 2015)*

### Why is TERP our only Buy rated YieldCo currently?

Valuing NextEra Energy Partners (NEP) with its deep, currently existing inventory of assets tends to fall on the more simplistic end of the spectrum where the key factor is determining the rate of drop-down growth compared with guidance and applying a yield. With YieldCos such as TERP and Abengoa Yield (ABY) that have more development risk, there is an added layer of complexity. As shown by the strong run utilities had in 2014, the market has exhibited generally been in a yield-focused mode lately with the safer YieldCos drawing large premiums (low yields). TerraForm is in an interesting position with investor bases from both the traditional utility universe along with some legacy tech interest from the sponsor's history.

**TERP offers the most upside of the three YieldCos we cover.**

**Figure 15: YieldCo Comp Set for 'Big Six'**

			Market Cap.	Price	Price	Dividend Yield (%)				
Rating			(\$ in millions)	2/22/2015	Target	2014E	2015E	2016E	2017E	2018E
YIELDCOs										
Abengoa Yield PLC	ABY	Not Rated	2,908	34.73	NA	1.94%	4.76%	6.07%	8.81%	8.67%
NextEra Energy Partners LP	NEP	Neutral	771	41.27	34.00	1.82%	2.71%	3.13%	3.61%	4.14%
NRG Yield Inc.	NYLD	Neutral	4,139	53.53	54.00	2.69%	3.31%	3.90%	4.61%	5.44%
Pattern Energy Group A	PEGI	Not Rated	1,952	28.26	NA	4.61%	5.24%	5.84%	6.49%	7.40%
TerraForm Power	TERP	Buy	4,161	33.40	38.00	0.99%	3.89%	4.57%	5.55%	na
Transtia Renewables	RNW-CA	Not Rated	1,451	12.65	NA	6.11%	6.15%	na	na	na
Average						3.0%	4.3%	4.7%	5.8%	6.4%

Source: FactSet and UBS Estimates

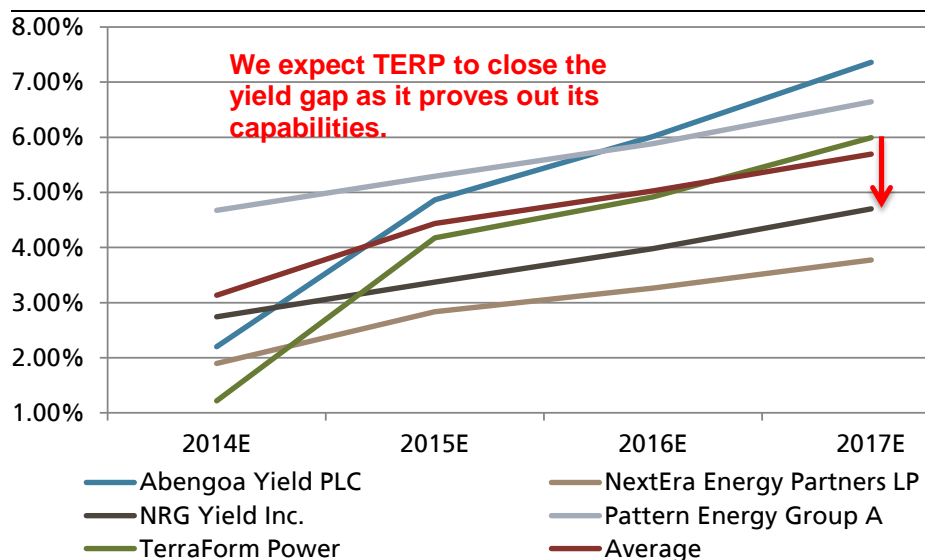
[We provide a more inclusive YieldCo comp set at the end of the note.](#)



## Why does TERP trade at a discount?

As expected, TERP's discount to the YieldCo group widens overtime given uncertainty but with decent visibility into the next two years we see value in assuming the risk. As we detailed previously we view TERP at a 100bp higher yield than NRG Yield as attractive value given its higher growth prospects.

Figure 16: YieldCo Dividend Yield Curves



Source: FactSet and UBS Estimates

However you slice it the market appears cautious on TERP.

We back into TERP's current ~\$34 market value by adjusting the yield on our dividend per share estimations.

- Backlog only: ~6% yield
- Pipeline and Backlog only: ~7% yield
- Leads, Qualified Leads, Pipeline, and Backlog: ~8% yield

## What's the upside promise? Trade closer to similar growth vehicles.

Should SUNE succeed in fully delineating its growth ambitions domestically and abroad, we see a long-term scenario in which TERP could trade at tighter than a 3% yield to reflect the 'clarity' of its drop-downs. Notably, MLP and YieldCo peers offering 20%+ growth all appear to price in this range (DM, MPLX, PSXP, EQM, etc.). Rather the key differentiating factor between the current 4.7% yield and the substantially tighter yields offered in these similarly growing entities is the risk around the growth. Should SUNE succeed in developing assets at such a pace that its inventory and backlog of operating assets grow out to provide enhanced visibility, alongside expanded ROFO deals, we see a clear path to improvement.

## Bottom Line: Taking a view on the Developer Model

We view TERP-SUNE as the 'solar equivalent' of the 'best in class' NEP-NEE development model established for wind. As a renewables developer, we see the outlook as particularly bright, emphasizing not just the outlook for the renewables sector in the US given forthcoming carbon regulations, but also the business model's focus on going abroad for opportunities. Given the focus management has put forward on not just developing in-house organic capabilities, but also forming partnerships abroad to enable this growth, we see management as broadly willing to look externally if it perceives a developmental need. Our confidence in the SUNE story is more around the wider solar development story rather than SUNE's track record; we see substantial opportunity for penetration. While the competitive dynamic remains our chief concern, rather than a scaling back of market opportunity, we see SUNE as having a headstart versus peers. We suspect greater delineation of its pipeline will firm up confidence.

Just to have SUNE in the conversation with NextEra Energy Resources is a win for management.



**Figure 17: MLPs and NEP Yields Versus TERP**

Ticker	Company name	Market Cap \$M	Price \$	Dividend Yield (%)			
				2014	2015	2016	2017
EQM	EQT Midstream Partners LP	5,025	82.8	2.6%	3.2%	3.8%	4.3%
MPLX	MPLX LP	6,455	80.3	1.8%	2.3%	2.8%	3.6%
PSXP	Phillips 66 Partners LP	5,535	73.8	1.7%	2.2%	2.8%	3.5%
SHLX	Shell Midstream Partners LP	5,410	40.1	1.0%	2.0%	2.6%	3.2%
VLP	Valero Energy Partners LP	3,018	52.4	1.8%	2.3%	3.0%	3.7%
DM	Dominion Midstream Partners LP	2,660	41.6	0.3%	1.9%	2.4%	2.9%
AM	Antero Midstream Partners LP	3,902	25.7	0.6%	3.0%	3.9%	4.9%
NEP	NextEra Energy Partners LP	766	41.0	1.1%	2.5%	3.0%	3.3%
Average		4,097		1.4%	2.4%	3.0%	3.7%
Median		4,463		1.4%	2.3%	2.9%	3.5%
TERP	TerraForm Power, Inc. Class A	4,231	34.0	3.2%	3.8%	4.6%	5.5%

Source: FactSet

Valuation gap exists between high growth MLPs and TERP – can management close the discrepancy?

## 4. Bonus: Utility Partnerships – ROFO Deals Coming

Beyond just third party acquisitions, we see an argument for TERP to partner with other renewable developers who are 'sub-scale' and cannot successfully (or don't want to bother) to move through the process to develop their own YieldCos.

**While TERP and SUNE already have some partnerships in place, we see large-cap utilities as well positioned to complement TERP's medium-term growth pipeline with a litany of long-term drop-down opportunities.**

We see Dominion as an ideal partner for YieldCos seeking to firm up their long-term drop down stories. Seeing that Dominion's portfolio consists of mid-scale long-term contracted utility scale solar assets, it hits down the sweet spot of independent developers like TerraForm to make it appealing to a wide variety of constituents. **We suspect Dominion management will deal only with those that exhibit top tier growth – and can stand to pay top dollars (driving the necessary accretion for D);** these likely include NYLD, NEP, and TERP – as well as potentially PEGI. We see TERP as the most likely candidate in the pool, seeing a clear desire to continue bolster its long-dated drop story following the First Wind acquisition.

### **Who else is a candidate? Think big**

Dominion has been the clearest in articulating its strategy but the likes of **Southern Company** and **Duke Energy** would make ideal partners for any of the YieldCos. Southern in particular has hinted in recent quarters that it is increasingly receptive to wind investments as the economics improve. While Southern could also contribute its Southern Power gas assets into any such vehicle, we don't perceive any interest yet from management around pursuing such a structure. Rather, we believe management is keen to maintain the Southern story's heralded 'simplicity'.

Race to be top three.

We see Dominion's comments around its Analyst Day as a clear indication it intends to pursue a deal with a 'Premium YieldCo'.

We suspect this is likely TerraForm, as D seeks to sell-down assets to a YieldCo after it has extracted tax benefits from (and subsequently contributes negligible EPS, but real cash flow via its long-term PPA).

An announcement could be forthcoming in the next several months.

We look for Dominion's southeast peers to follow suit eventually, also structuring sell-down vehicles for their own assets

## Who else are the existing partners?

SUNE management made an effort at its latest Capital Markets Day to delineate its existing development counterparties, particularly in its global efforts. We look for more such partnerships to be announced as the company executes on its global expansion.

- **South America:** Deal with Renova in Brazil.
- **Philippines:** Aboitiz Group

## Other Thoughts on TERP: Avenues to Growth

### Does Distributed Generation fit within a YieldCo?

While YieldCo's thus far have largely existed within the context of dropping down existing and future utility-scale deals, we see a natural progression in the sector towards the need to drop down of Distributed Assets into YieldCo structures, particularly in 2017 and beyond, once the ITC expires. While typically lower quality in terms of contract and credit, we see the sheer size of this opportunity as able to keep 'feeding' the proverbial YieldCo beast well into the future. The pressure for SUNE will be gaining sufficient scale in even the medium term around DG opportunities to meet the pace of development necessary to *continue* to grow DG alongside its overall portfolio and keep up with the TERP growth rate. DG growth is inevitable and will become more common place, further improving the discounted multiple for TERP today versus peers.

SUNE DG guidance for 2015 I  
~425MW, up from 150MW in  
2014.

### TERP's backlog has upside embedded from future and unknown DG drops

In contrast to that of NYLD and NEP, TERP's disclosed backlog necessary has a limited quantity of DG opportunities embedded given the short development life cycle. As such the backlog will necessarily *always* become inflated nearer-term as anticipated DG projects become 'known'. We see investors as likely failing to discriminate between a conventional MLP and Utility-scale backlog whose near-term MWs are unlikely to change meaningfully, whereas DG totals could be revised significantly higher. This is a change in the drop-down outlook.

DG projects can cycle from a lead  
to pipeline relatively quickly.

### But will TERP eventually pursue residential DG? Yes.

We suspect yes, but the scale of residential solar DG will likely continue to pale in comparison to the OECD opportunity commercial & industrial (mid-scale) opportunities alongside further utility-scale deals. We suspect management may yet sign a ROFO deal with an independent electric retailer to push forward on the DG effort rather than necessarily relying upon SUNE to enter into this space in any meaningful manner. Bottom line, we think this is more of a partnership focus, rather than an organic focus. With relatively scant details on this side of the story at the SUNE/TERP Capital Markets Day, we expect investors to press for greater details.

Go-to market strategy is less clear  
though – higher opex could limit  
willingness to focus sharply here.

**More partners on the development side too?** With TERP among the best cost of capitals around, we do not think third party transaction necessarily need to limit themselves to acquisitions of existing assets; rather future assets would appear to be eligible as well via additional ROFO arrangements. We suspect as investors focus deeper on the backlog story articulated by management, they will naturally migrate towards understanding the nature of ROFO arrangements with existing and future counterparties.

# Valuation: \$38 Price Target (Buy)

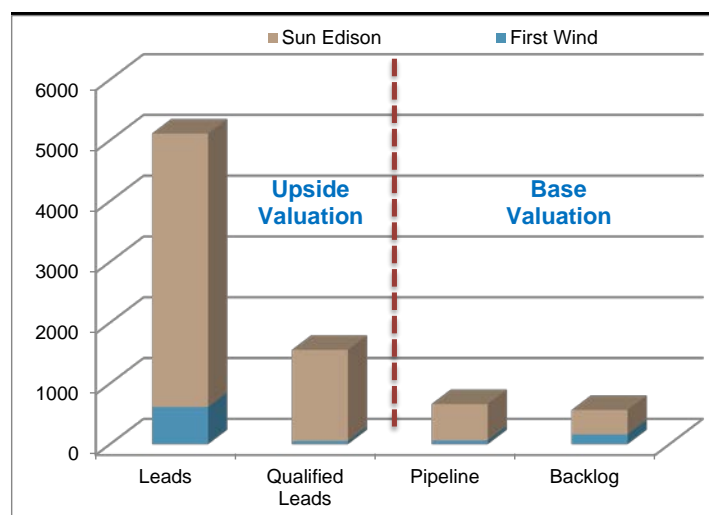
We apply a consistent two-step valuation methodology as we do for our latest YieldCo initiation, NextEra Energy Partners (NEP):

**(1) Methodology:** We value TerraForm Power by applying a 6% yield on 2018 dividend per share. In our valuation of NEP and NRG Yield we apply 5% and 6% yields, respectively, which we believe is reflective of the drop-down visibility and a variety of other factors that we will discuss later in the report. The primary YieldCos we utilize for a peer universe currently have 2017 and 2018 dividend yields of 6.0% and 6.7%, respectively. Excluding TERP and Abengoa Yield (due to the emerging market focus – a more interesting comp for SUNE's next emerging market YieldCo) the average yield is 6% which we apply in our valuation. In brief we still view NEP's pipeline and sponsor as best-in-class but see TERP as rivaling NRG's YieldCo in overall quality while offering a bit more certainty than the likes of Pattern Energy (PEGI) and Abengoa Yield (ABY).

TERP is in the top-class of YieldCos.

We apply a 6% DPU yield in our valuation of TERP, in-line with our NYLD methodology.

Figure 18: Drop-Down CAFD (\$Mn) at TerraForm - Power



Source: Company Filings and UBS Estimates

Our base valuation only incorporates project classes that are more likely than not to be completed.

**(2) What's in the valuation?** We give TERP credit for the pipeline and backlog at SUNE and First Wind, 60% and 90% historical conversion rates, respectively. Between these two developers there are 6.7GW of potential projects, or 5.1GW after adjusting for management's historical conversion rates. Our base valuation conservatively excludes any contribution from leads and qualified leads as they are more likely than not to materialize (management ascribes 10% and 40% conversion rates to these categories, respectively, based upon historical trends). We present this in our upside case subsequently where we further cut management's guidance in half, still seeing significant upside. Our valuation also does not include any Just Energy or third party assets.

The most significant differences between the downside and upside cases relate to the pipeline CAFD and yield premium/discount applied which we will discuss subsequently

Figure 19: TerraForm Power Valuation

TerraForm Power (TERP) Valuation - 2018E	Downside	Base Case	Upside
Run-Rate CAFD 2015	\$219	\$219	\$219
Sponsor Drop Down			
Leads (5% Prob.)	\$0	\$0	\$222
Qualified Leads (20% Prob.)	\$0	\$0	\$252
Pipeline (60% Prob.)	\$0	\$292	\$292
Backlog (90% Prob.)	\$513	\$513	\$513
Just Energy Pipeline & Other ROFOs	\$0	\$0	\$0
<b>Total Call Right Projects &amp; ROFO</b>	<b>\$513</b>	<b>\$805</b>	<b>\$1,279</b>
Gross Cash Available for Distribution (CAFD)	\$731	\$1,023	\$1,497
Corporate Interest (Post Tax)	(\$93)	(\$130)	(\$190)
Total Net CAFD (Pre-Reserve)	\$639	\$894	\$1,308
Distribution Reserve (1-Payout)	15.0%	15.0%	15.0%
<b>Net CAFD</b>	<b>\$543</b>	<b>\$760</b>	<b>\$1,112</b>
<b>CAFD Distributed to LP Unit holders</b>	<b>\$377</b>	<b>\$527</b>	<b>\$772</b>
Est. Shares Count (Mn)	190	235	307
Net CAFD per Share, pre IDRs	\$2.85	\$3.24	\$3.62
<b>Dividend Per Share (DPS)</b>	<b>\$1.98</b>	<b>\$2.25</b>	<b>\$2.52</b>
Peer Yield	6.0%	6.0%	6.0%
(Premium) / Discount	33.6%	0.0%	-16.8%
Assumed Yield for TERP	8.0%	6.0%	5.0%
<b>Valuation</b>	<b>\$25.00</b>	<b>\$38.00</b>	<b>\$51.00</b>
<b>Upside/Downside to Current Price</b>	<b>-27%</b>	<b>11%</b>	<b>50%</b>

Source: Company Filings, FactSet, and UBS Estimates

Where is the value?

Operational assets in TERP

Assets under development at SUNE.

Taking these two components of value together, we arrive at a **\$38 Price Target** and **Buy Rating**. This is not an out of consensus call with the stock already having five buy ratings and one neutral with an average price target of ~\$38.50/sh; however, we emphasize that finding quality utilities with upside is more challenging lately following the strong performance of the XLU in 2014. For example in the last four months we have downgraded six regulated utilities (PNW, EDE, DUK, ED, EIX, and WR), largely on concerns about valuation. As also shown below, the YieldCos generally are viewed positively with Buy ratings outweighing Neutrals for all except TransAlta Renewables.

It is getting harder and harder to find attractive valuations in the utilities space – hence why investors turned to YieldCos.

Figure 20: TERP is the Sell-Side's Preferred YieldCo

YieldCo	Average Rating	# Buys	# Neutrals	# Sells	% Buys
RNW-CA	Hold	1	5	0	17%
NEP	Buy	7	6	0	54%
ABY	Buy	3	2	0	60%
NYLD	Buy	7	4	0	64%
PEGI	Buy	7	2	0	78%
TERP	Buy	5	1	0	83%

Source: FactSet 2/21/2015 (Pre-UBS TERP Initiation)

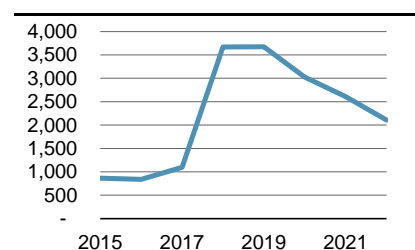
Details on some of our key assumptions to our valuation are below:

- Financing drop-downs and tax equity: We utilize a 12x EV / CAFD drop-down multiple, assume that tax equity remains at around 35%.
- Parent leverage: Consistent with the midpoint of the 3.0-3.5x Parent HoldCo Net Debt / Gross CAFD target.
- Equity Issuance Price: We conservatively assume a ~10% discount to the current share price for future equity issuances with a **\$30** repurchase price. Management acknowledges that it will have significant equity needs but anticipates the yield tightening and future equity issuances having less of an impact.

Our Buy rating and \$38 Price Target is not based upon lofty assumptions with our projections generally aligning with guidance.

- CAFD per Watt for different asset types:
  - US Solar: Distributed Generation ~\$0.25 and Utility Scale \$0.07
  - US Wind: ~\$0.15
- Average Annual Capacity Additions: ~900MW for the next three years (2015-2017) followed by ~3,000 for next five years (2018-2022). In conjunction with the CAFD per watt assumptions above, our estimates align with management's guidance for DPS. With 3.3GW of visible projects at SUNE/First Wind, we are comfortable with the near-term; ramping up for the future will be
- Interest rates: We believe that increasing interest rates would be at least partially offset by a larger balance sheet and improved credit ratings. In January TERP issued \$800Mn of 2023 senior notes at 5.875% and we assume a 6% pre-tax cost of debt when calculating the corporate interest expense.

**Figure 21: Annual Capacity Additions (MW)**



Source: Company Filings and UBS Estimates

We present an alternative view on value using a dividend discount model which is based on the present value of future LP distributions. This approach is largely consistent with our Price Target but we opt for the more simplistic approach in **Figure 19** as it is not subject to terminal cost of equity and less observable inputs.

**Figure 22: DDM Approach to Valuation Derives Similar Value (*unofficial* valuation)**

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Estimated Cash Available for Distribution	\$214	\$299	\$402	\$775	\$1,006	\$1,257	\$1,476	\$1,625	\$1,848	\$2,106	\$2,370
CAFD/Share	\$1.64	\$2.05	\$2.28	\$3.28	\$3.58	\$3.99	\$4.30	\$4.50	\$4.75	\$5.09	\$5.40
% Growth		25%	11%	44%	9%	12%	8%	5%	6%	7%	6%
Total Distribution (\$MM)	\$170	\$229	\$371	\$678	\$992	\$1,253	\$1,476	\$1,668	\$1,921	\$2,177	\$2,450
Payout	79%	77%	92%	87%	99%	100%	100%	103%	104%	103%	103%
Less: IDR (\$MM)	\$0	\$5	\$37	\$139	\$258	\$361	\$448	\$529	\$632	\$739	\$854
LP Distribution (\$MM)	\$170	\$225	\$335	\$538	\$733	\$893	\$1,028	\$1,139	\$1,289	\$1,438	\$1,596
Unit Outstanding (MM)	130	146	176	236	281	315	343	361	389	414	439
LP Distribution/Unit	\$1.31	\$1.54	\$1.90	\$2.28	\$2.61	\$2.84	\$3.00	\$3.16	\$3.32	\$3.48	\$3.64
% Growth		18%	23%	20%	14%	9%	6%	5%	5%	5%	5%
Payout	79%	75%	83%	69%	73%	71%	70%	70%	70%	68%	67%
Coverage	1.3x	1.3x	1.1x	1.1x	1.0x	1.0x	1.0x	1.0x	1.0x	1.0x	1.0x
Terminal value											\$52
PV of LP Distribution/Unit	1.21	1.32	1.51	1.67	1.77	1.78	1.74	1.70	1.65	1.60	1.55
Terminal PV											\$21
Equity Value per Unit											\$39

Source: Company Filings and UBS Estimates

## Downside Case: Trouble in Conversion Paradise

In our downside case we assume only the backlog is completed (at 90%) and include no value for the pipeline. Furthermore, in such a scenario where SunEdison fails to live up to its historical conversion rates we anticipate the yield widening and YieldCo being viewed at a disadvantage to peers. This scenario with less CAFD and a 200bp discount (8%) implies value of **\$25**. With many YieldCos with limited growth trading already at a 6% yield, it's hard to see TERP trading this wide.

**Failure to SUNE to develop would shake investors' confidence.**

## Upside Case: Accelerating the Growth

There are another 7.3GW of conversion weighted assets (primarily solar) of leads and qualified leads that we exclude from our base valuation but we present a scenario that includes these assets at a haircut multiple. Including these assets implies upside to \$45 if using a 6% yield. If TERP is able to execute here it would likely be able to trade at a premium to YieldCo peers: the combination of higher growth and a lower yield assumption would drive upside to **\$51**. If TERP is simply able to trade at a tighter spread to the highest quality YieldCo (NEP in our opinion given the pipeline) without materially accelerating its growth it would trade closer to \$42. We do not include a proxy for further third-party acquisitions in our valuation. Ultimately we view the upside/downside spread quite favorably.

Base Case w./ 6% Yield: \$38

Base Case w./ 5% Yield: \$45

Upside Case w./ 6% Yield: \$42

Upside Case w./ 5% Yield: \$51

## The value in being best-in-class

As the premier YieldCos begin to settle into their more stable trading ranges, we see the rush to establish a low cost of capital as vital in being success on future M&A. This creates a self-fulfilling prophecy where the leading YieldCos are able to continue to win and transact on accretive deals that smaller rivals may struggle to compete on. TERP's strong growth and CAFD generation in our valuation is based solely on the sponsor's ability as a development company but there is also the opportunity for TERP to remain active in M&A, offering even more upside.

Any accretive third-party transaction would be a great win for SunEdison which owns LP and GP shares in TERP.

Figure 23: Smaller YieldCos could be absorbed by the larger fish

YieldCo	Name	Market Cap	Current Yield
INGXF	Innergex Renewable Energy Inc.	979	5.2%
UKW-GB	Greencoat UK Wind Plc	736	6.0%
TRIG-GB	Renewables Infrastructure Group Limited GBP Red.Shs	642	6.0%
MCQPF	Capstone Infrastructure Corporation	242	9.4%

Source: FactSet

This is far from an exhaustive list and in fact we believe a transaction with Atlantic Power is among the most likely, potentially fetching over \$500Mn EV. Additional background on Ontario's YieldCo opportunities is available in our recent note, ['Looking North'](#).

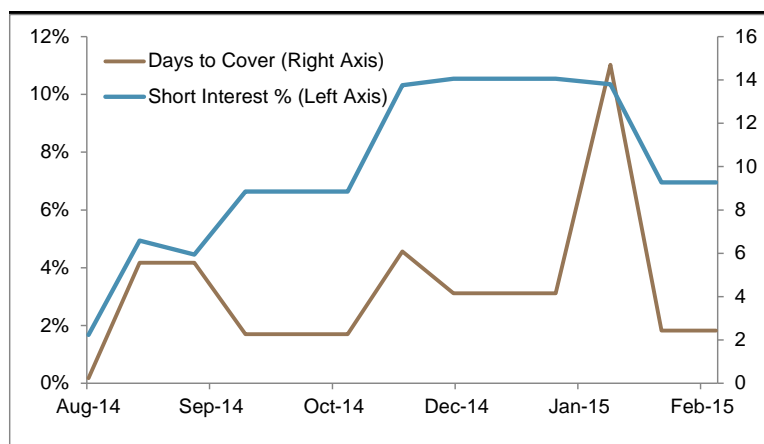
## Short at your own peril – a cautionary tale

YieldCos propensity for large third-party deals have caused multiple different YieldCos to gap-up upon deal announcement. We highlight a few below:

- Canadian Solar acquiring Recurrent (2/3/15): Up ~27%
- TerraForm acquiring First Wind (11/17/14): Up ~27%
- NextEra Energy Partners accelerating its growth rate guidance (10/16): Up ~8%
- NRG Yield acquiring Alta Wind (6/4/14): Up ~5%

All of the YieldCos tend to have lower liquidity and higher volatility given the significant sponsor ownership.

**Figure 24: TERP Short-Interest: Days and Interest**



Source: FactSet

The short interest peaked around year-end and has declined notably back to 7% prior to the First Wind deal.

## Warehouse facility provides drop-down protection

We see the recent disclosure of a \$1.5Bn temporary development facility at SUNE as meaningfully improving the ability to both acquire independent portfolios and drop them into TERP as well as develop assets until they are 'ready' to be dropped following COD. We see this as importantly adding to the overall flexibility to minimize development risk exposure back to TERP. The facility is non-recourse and is financed by \$500Mn equity commitment from First Reserve Corp., \$600Mn term loan, and \$400Mn revolver.

Ability to 'store' projects before they are operationally ready insulates TERP from risk.

We suspect this will lead to further acquisitions of yet-to-be-completed assets, which will be subsequently developed to COD and dropped. While we are not suggesting that SUNE is capital constrained, having a readily available source of liquidity enables a cheaper cost of capital to enable 'bridge' financing for projects prior to placing them into a 'long-term' capital vehicle in TERP. Moreover, the bridge provides flexibility on timing of drop-downs to enable 'smoothing' of drops into TERP.

## Catalysts

- **Third party M&A/development deals:** Buying another portfolio or adding ROFO agreements with third parties such as Just Energy. As shown above, external acquisitions tend to have strong positive impacts on the YieldCos value. As discussed with Dominion or any range of other large-scale utilities, YieldCos remain willing long-term buyers.
- **Change in tax legislation:** An extension of PTCs, ITCs, or other favorable tax reform that keeps renewable investment subsidized for longer would directly help all developers.
- **Carbon policy and renewable portfolio standards (RPS):** While there are many challenges against the latest EPA rules on carbon and other emissions, the writing is on the wall that more and more coal assets will remain on the chopping block. Natural gas fired generation will fill the vast majority of the gap but with renewables becoming more economic and state's poised to increase their respective RPS, solar will fill a growing niche.
- **Announcement of EM YieldCo structure:** SunEdison management made its confidential filing in 2H14 and is targeting a mid-2015 offering. From a pure pipeline quantity standpoint this could be a negative or a positive depending on how much of the development arm is focused here. SUNE growing in scale and credibility will help traditional utility investors gain more comfort.
- **US/Chinese trade dispute resolution:** In December the US Department of Commerce released a ruling which increased tariffs on Chinese solar modules by 75-100%, a negative for solar project economics. Further details are available in the note ['US-China Tariffs Up to 25% More Punitive than Preliminary Rates'](#).

Most significant catalyst by far would be another large external deal.

First Wind deal reduces exposure to solar module tariffs.

## Overview of TerraForm Power

TerraForm Power was formed by SunEdison as a dividend and growth-oriented vehicle (YieldCo) to own, operate, and manage its completed renewable assets with contracted cash flows. The IPO portfolio consisted of solar assets but the First Wind acquisition has diversified the offering to include wind. Previously these solar assets had been retained by SunEdison, a company which has exhibited tremendous volatility throughout its history as a developer and solar manufacturer. As shown on the right, SUNE has a 2.5 beta over the past six months compared with 1.4 for TERP. TERP's volatility is still well above that of comparable YieldCos but that has been influenced by the First Wind deal and is still significantly below the five-year beta for SUNE of 2.0. As NRG Energy proved out, there was a value creation opportunity for the sponsor to bifurcate the safer contracted cash flows from the more volatile business. We expect the Beta around both entities to decline, increasing investor comfort with the asset class.

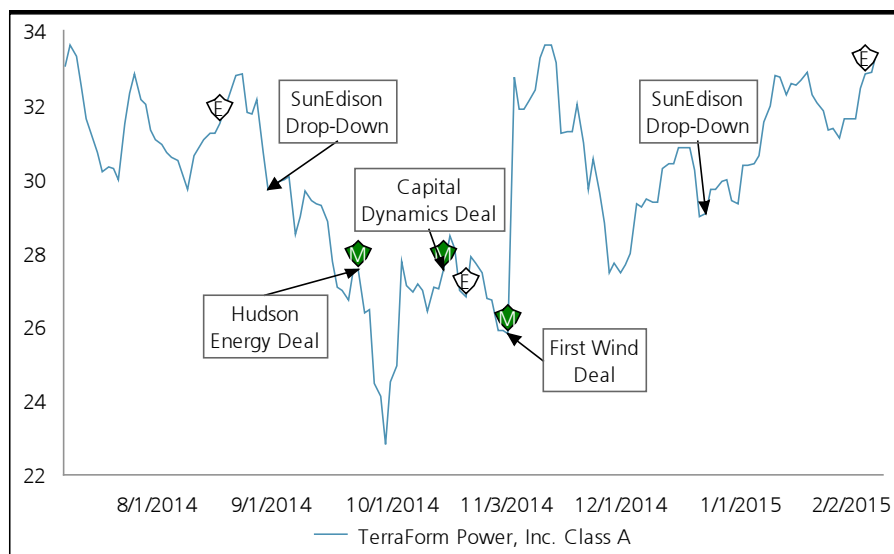
Figure 25: Trailing 6 Mo. Betas

Trailing 6 Month Betas	
SUNE	2.52
TERP	1.36
PEGI	1.12
ABY	1.08
NYLD	1.04
NRG	0.89
NEP	0.50
RNW-CA	0.23
YieldCo Avg	0.89

Source: FactSet



**Figure 26: TerraForm Power Annotated Trading History**



Source: FactSet

The TERP IPO priced at \$25/sh (high end of \$23-25/sh range, up from initial range of \$19-21) and raised ~\$500Mn in a ~20Mn share offering. Shares slumped below the IPO price in October to ~\$21.60 but surged back into the low \$30s after the First Wind deal on November 17<sup>th</sup>. For comparison, SunEdison shares have largely been range-bound in the low \$20s for the past year.

The market cap gap has closed to ~\$1Bn as of February 2015.

TERP: \$4.1Bn

SUNE: \$5.1Bn

**Figure 27: SUNE and TERP Relative to S&P500 – SUNE has been tremendously volatile over the years**

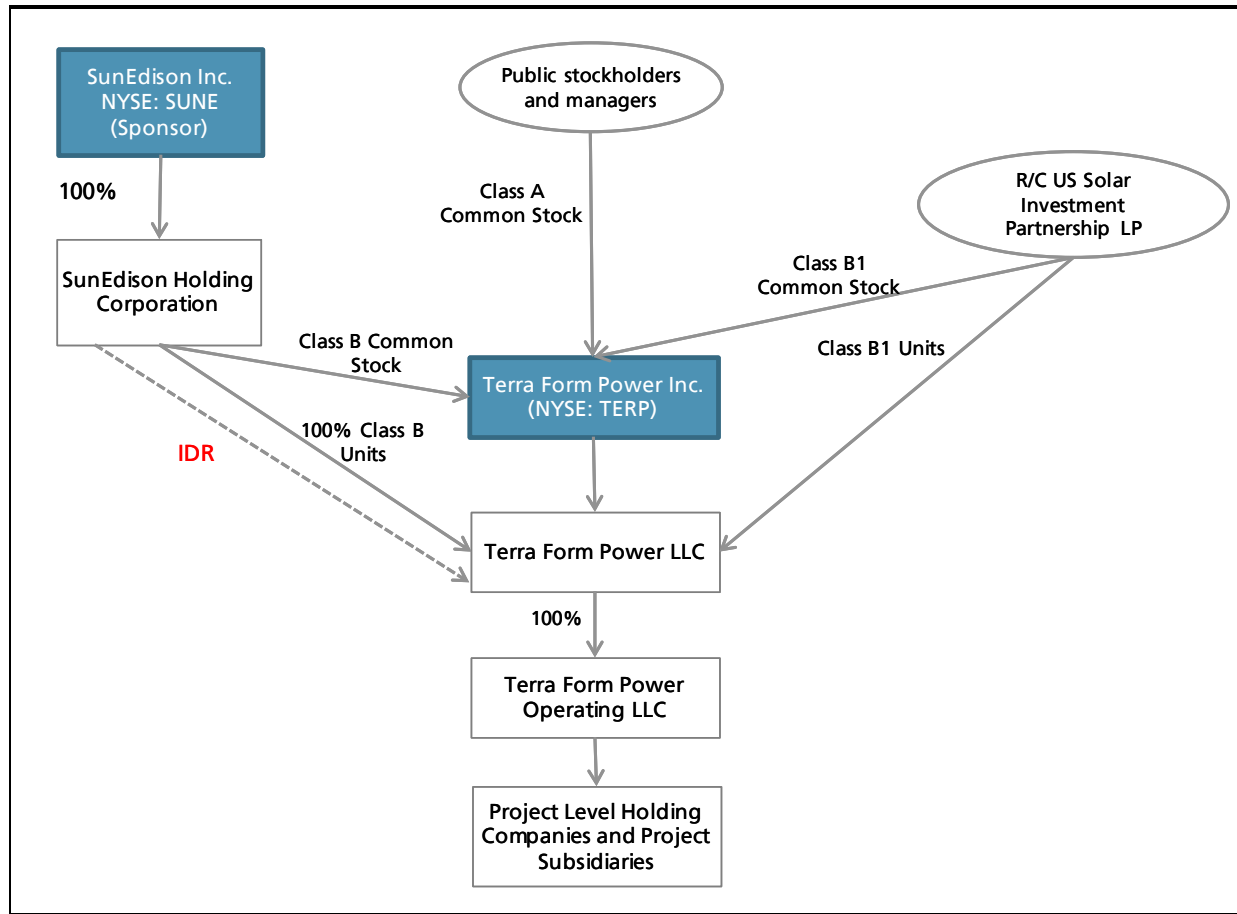


Source: FactSet

## Ownership Structure and Relationship with SunEdison

At the TERP IPO SunEdison sold 36.1% of its economic interest and has exposure to TERP via common ownership and its Incentive Distribution Rights (IDRs).

**Figure 28: TerraForm Power Corporate Structure**



Source: Company Filings

### Who is SunEdison? A look at sponsor quality

SunEdison started a silicon-wafer manufacturing company as Monsanto Electronic Materials Company (MEMC Electronic Materials) and focused primarily on the development of the semiconductors wafers. In 2009 MEMC acquired then private SunEdison to focus on the development of photovoltaic (PV) assets and 2013 the name was changed from MEMC (ticker: WFR) to SunEdison (ticker: SUNE). Today SunEdison has five primary business lines:

#### (1) Semiconductor: Publicly traded electronic wafer business

This is the legacy wafer electronics business and in May 2014 SunEdison had an IPO for SunEdison Semiconductor Ltd. (ticker: SEMI). SunEdison currently owns 10.6Mn shares as of January 20<sup>th</sup> disclosures (~24%; or \$210Mn market value as of early February). SunEdison has stated that it plans to fully exit this position over time with proceeds used to finance the balance of operations.

## (2) Solar Materials & Intellectual Property

Despite planning to exit the semi business, SunEdison still manufactures solar panels and views its technological advantages as a core competency. Technologies such as High Pressure-Fluidized Bed Reactor (HP-FBR) and Continuous Czochralski (CCz) allow SunEdison to develop purer ingots that lead to more efficient solar panels capable of generating more watts per square inch.

**Leveraging its intellectual property allows SunEdison to build superior technology without a high capital burden.**

While an important ingredient of SUNE's success, management wants to focus more on the development side of the business and works with partners to reduce the capital intensive nature of the solar manufacturing business. There is a joint venture with Samsung Fine Chemicals for the HP-FBR Poly technology which is part of the strategy to reduce panel raw materials costs below 5¢ per watt by 2016. Another joint venture is with Adani Enterprises for a \$4Bn manufacturing facility in India where SUNE licenses its intellectual property (IP) and sells its specialized equipment to the JV. Leveraging its IP allows SunEdison to build superior technology without a high capital burden.

**Key to JV deals is preserving SunEdison cash for development of renewable projects.**

## (3) Servicing: Minor incremental opportunity, but key to scale

SunEdison performs the maintenance for the solar and wind assets it develops and as of the 2015 Analyst Day the company had over 5GW of assets under management (post-First Wind). This includes preventative maintenance on the solar and wind projects. The servicing revenue for 2014 was \$206Mn versus guidance of \$180-230Mn. Management targets growing this to a ~20GW platform in coming years. While margins are not disclosed, with revenues at ~\$20/kW-yr, we estimate EBITDA margin as likely no larger than ~\$5/kW-yr (or ~\$100 Mn on 20GW, up from ~\$20-25 Mn likely generated off the current 5 GWs in place today). *Bottom line this business does not add materially to cash flow generation, but is more meaningful to gaining scale in an increasingly competitive operating environment.*

## (4) Development Company

The development arm has four primary classifications based upon how advanced the opportunity is and the likelihood of successful completion. The goal is ~20% operating gross margins from this business.

**2H14 guidance was for 13% more efficient SunEdison modules versus peers.**

- **Leads:** This is the first step to executing on a completed asset. There is no commitment from the counterparty and a low probability of success as a mere solicitation of interest has been received or a target opportunity identified.
- **Qualified Leads:** As confidence in an opportunity grows, the potential project moves to the qualified lead bucket from just a lead previously. Qualified leads have development budgets approved but historically still have below a 50% probability of success.
- **Pipeline:** Opportunities in the pipeline either have a signed/awarded PPA or (1) site control, (2) an interconnection point identified, and (3) a high probability of signing an offtake agreement.
- **Backlog:** These assets are under contract with a PPA or some other form of offtaker agreement and generally have a high probability of successful completion. Smaller distributed generation projects typically are not in the backlog due to the fast conversion cycle.

## (5) YieldCos

TerraForm was formed to own the North American and Chilean assets and SUNE has confidentially filed an S-1 for an emerging markets YieldCo (Africa and Asia are an expected focus). SunEdison's focus is transitioning from what it calls 'subsidy-driven' markets to 'economics-driven' markets, highlighting its ambitions to grow in countries at grid parity with growing electricity needs. As of 2014 approximately half of the pipeline was in North America with 36% in EMEA/Latin America and the balance in Emerging Markets.

TERP and the EM YieldCo provide value for SUNE in two ways: (1) SunEdison owns a direct common equity owner interest in the YieldCo and; (2) An incentive distribution right [IDR] that gives SUNE a portion of future cash flows based upon the YieldCos rate of growth. Below we summarize the total distributions to SunEdison from TERP which consist of dividends on the subordinated shares and IDRs. Our 2019 total proceeds to SunEdison is a few percent below guidance, likely implying that management intends to accelerate growth faster than we expect towards the end of the forecast horizon.

**Figure 29: TERP Distributions to SUNE – A key component of SUNE valuation**

SUNE GP Guidance (2015 Analyst Day)	2015	2016	2017	2018	2019
TERP Dividends	82	96	119	143	164
UBSe (Assuming conversion)	84	99	123	147	168
TERP IDRs	2	9	46	142	280
UBSe	0	5	37	139	258
Total Cash Flows to SUNE from TERP	84	105	165	285	444
UBSe	84	104	159	286	427
Delta vs UBSe	0	(1)	(6)	1	(17)
Dividend per Share Guidance	\$1.30	\$1.53	\$1.90	\$2.28	\$2.61
UBSe	\$1.31	\$1.54	\$1.90	\$2.28	\$2.61
Implied Sponsor Shares (Mn)	63.1	62.7	62.6	62.7	62.8
Estimated Value of IDRs to SUNE per Share	\$17				

Source: Company Filings and UBS Estimates

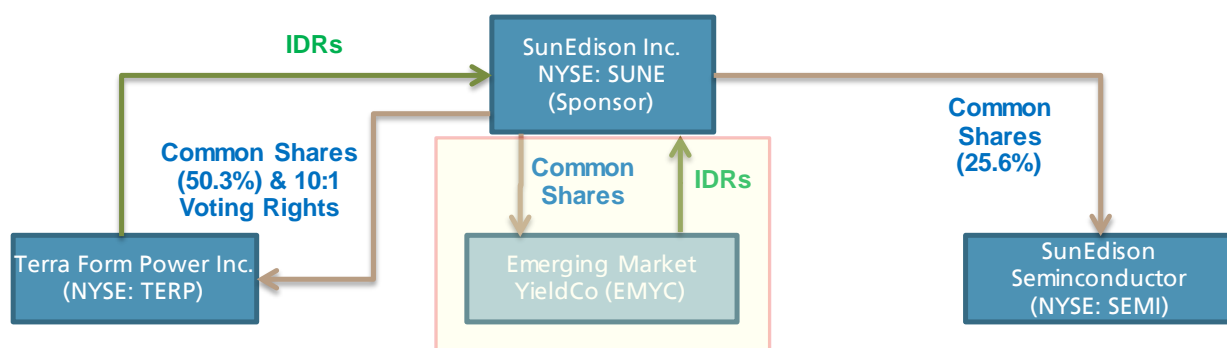
As of 4Q14 there was 295MW of projects retained at SUNE, up from 127MW in 4Q13.

Using assumptions similar to other MLPs structures we following, we estimate that the IDR payments to SUNE from TERP are worth \$17/sh at SUNE.

This represents ~75% of SUNE's market cap with shares at \$22.

Below we present a simplified organization chart for SunEdison to illustrate how the YieldCos fit into the corporate structure.

**Figure 30: SunEdison Simplified Organization Chart (EM YieldCo Pending)**



Source: Company Filings

## Assets Overview

We include the following tables giving an overview of TERP's initial portfolio, follow-on assets subsequent to the IPO, as well as the First Wind assets. Consistent with SunEdison's profile, the makeup is primarily utility scale solar.

### Terra Form Portfolio

Figure 31: TerraForm Power Portfolio as of November 30, 2014

Project Name	Location	COD	Nameplate Capacity	PPA Duration	Credit Rating
<b>Distributed Generation:</b>					
U.S. Projects 2014	US	2Q14-4Q14	45.4	20	A+, A1
Summit Solar (US)	US	2007-2014	19.6	14	A, A2
Summit Solar (Canada)	Canada	2011-2013	3.8	18	A-, Aa1
Enfinity	US	2011-2013	15.7	18	A, A2
U.S. Projects 2009-2013	US	2009-2013	15.2	16	BBB+, Baa1
U.S. State Prisons Projects	US	2H14	13.5	19	A+, A3
MA Operating	US	2H13	12.2	20	A+, A1
SunE Solar Fund X	US	2010/11	8.8	17	AA, Aa2
Total DG			134.2		
<b>Utility Scale</b>					
Mt. Signal	US	1Q14	265.9	24	A, A1
Regulus Solar	US	4Q14	81.6	20	BBB+, A2
North Carolina Portfolio	US	4Q14-1Q15	26.0	15	BBB+, A1
Atwell Island	US	1Q13	23.5	23	BBB, A3
Nellis	US	Q42007	14.1	13	AA+, Aaa, BBB+, Baa2
Alamosa	US	Q42007	8.2	13	A-, A3
CalRENEW-1	US	2Q10	6.3	16	BBB, A3
Marsh Hill	Canada	2Q15	18.7	20	A-, Aa1
SunE Perpetual Lindsay	Canada	4Q14	15.5	20	A-, Aa1
Stonehenge	UK	2Q14	41.1	15	A-, Baa1
Stonehenge Operating	UK	2013	23.6	14	NR, NR
Says Court	UK	2Q14	19.8	15	A-, Baa1
Crucis Farm	UK	3Q14	16.1	15	A-, Baa1
Norrington	UK	2Q14	11.2	15	A-, Baa1
CAP	Chile	1Q14	101.2	20	BBB-, NR
Total Utility Scale			672.8		
<b>Total Base Portfolio</b>			<b>807.0</b>		
<b>Subsequent Portfolio</b>					
Hudson Energy (M&A)	US	2011-2013	25.5	15	A+, A1
LPT II Fund (Drop)	US	4Q14-2Q15	4.6	19	A, A2
Crundale (Drop)	UK	4Q14	37.8	15	A-, Baa1
Fairwinds (Drop)	UK	2Q14	12.2	15	A-, Baa1
<b>Total Subsequent Portfolio</b>			<b>80.1</b>		
<b>Total TerraForm Portfolio</b>			<b>887.1</b>		

Source: Company Filings

The Figure above is as of November 30<sup>th</sup> and excludes the Capital Dynamics transaction which closed on December 22<sup>nd</sup> and the second SunEdison drop-down, collectively representing 104MW and ~\$20Mn of CAFD.

We call attention to the CAP asset which is a 100MW utility scale solar project interconnected with the Compania Minera del Pacifico (CMP) mine. There is the risk that operations for the mine could materially deteriorate causing the asset to no longer have a captive off-taker.

## Where does the debt sit?

Management has taken a more conservative approach to financing and tends to layer debt onto only the largest utility scale projects; this leaves room for additional leverage on future drops.

**Figure 32: Project Level Financing**

Project	Type of Financing	Principal Amount \$MM	Maturity
<b>Distributed Generation</b>			
California Public Institutions	Construction and Term Debt	17	2024-2025
Enfinity	Finance Lease Obligations	31	2025-2032
	Term Debt	5	2032
Summit Solar U.S.	Term Debt and Finance Lease Obligations	24	2020-2032
U.S. Projects 2009-2013	Solar Program Loans	9	2024-2026
U.S. Projects 2014	Finance Lease Obligations	5	2019
<b>Total Project-Level Debt - Distributed Generation</b>		<b>91</b>	
<b>Utility</b>			
CAP	Term Debt	213	2032
	VAT Facility	35	2014
Mt. Signal	Senior Notes	413	2038
Nellis	Senior Notes	46	2027
Regulus Solar	Construction Debt	112	2015
	Development Loan	38	2016
	Finance Lease	9	2034
SunE Perpetual Lindsay	Construction Debt	48	2014
<b>Total Project-Level Debt - Utility</b>		<b>914</b>	
<b>Total Project-Level Debt</b>		<b>1,005</b>	

Source: Company Filings

## First Wind Portfolio

Below we present First Wind's portfolio which consists predominately of wind assets across the Northeast and Hawaii as well as one solar asset. We see its specialized development business in hard-to-permit/develop areas in New England and New York as its competitive advantage over peers (NEE doesn't often go head to head with First Wind). We see both First Wind and Invenenergy as well positioned to capture growth opportunities in the New York and New England markets as both of these undergo reforms to enhance the effectiveness of their procurement processes (NY may move to a long-term PPA model).

First Wind is also one of the largest developers in Hawaii (~1,000MW of wind in Maui), a market with strong fundamentals for renewables with its oil-fired fleet and state incentives. First Wind management commented this past summer that Hawaii has seen PPAs over \$200/MWh although it has seen prices decline toward \$150/MWh due to increased competition. **NextEra's attention to the market could further compress margins.**

**First Wind's focus has been hard-to-develop areas for wind**

**The portfolio is among the largest existing and development opportunities that was on the market**

Figure 33: First Wind Portfolio as of Feb 2015

Project Name	Location	COD	Nameplate Capacity	PPA Duration	Credit Rating	Operational Focus	REC?
Wind							
Cohocton	US - NY	2009	125	6	A-,Baa2	Clipper Liberty C96	REC
Rollins	US - ME	2011	60	17	BBB+,A3; NR	Curtail	REC
Stetson I	US - ME	2009	57	5	BBB,Baa2	Curtail	REC
Mars Hill	US - ME	2007	42	-	A+,Aa2	PPA	REC
Sheffield	US - VT	2011	40	14	NR	Clipper Liberty C93	REC
Bull Hill	US - ME	2012	35	13	A-,Baa1		
Kaheawa Wind Power I	US - HI	2006	30	12	BBB-,NR		
Kahuku	US - HI	2011	30	16	BBB-,Baa1	Clipper Liberty C89	
Stetson II	US - ME	2010	26	8	BBB,Baa2; NR		REC
Kaheawa Wind Power II	US - HI	2012	21	18	BBB-,NR	Battery	
Steel Winds I	US - NY	2007	20	5	A-,Baa2	Clipper Liberty C89	REC
Steel Winds II	US - NY	2012	15	5	A-,Baa2	Clipper Liberty C89	REC
Wind Total			500	9			
Solar							
MA Solar	US - MA	2014	21.1	24	A+,A1		
Total			521	9.9			

Source: Company Filings and UBS Estimates

## Diving into the portfolio

Questions about fundamental asset quality have largely been ignored with solar and wind investments viewed as somewhat fungible as long as the PPA was signed at a similar time in a similar market. A focus on turbine/panel quality, PPA details, and other nuances could emerge as more developers bring assets to the table. We highlight some of the operational headwinds that could impact management's ability to achieve its CAFD guidance.

- **Lack of OEM support:** 230MW of the portfolio utilizes various Liberty turbines manufactured by Clipper which First Wind is now providing support for these assets. In 2012 First Wind sued Clipper over the performance of the Liberty Turbines due to alleged defects that caused operational losses. The following year First Wind settled with Clipper. We have heard from more than one large North American wind operator that there are concerns in the industry about the reliability of the Clipper assets and perceive them as higher risk than average. Going forward First Wind has to self-fund the maintenance for any operational issues as well as handle the engineering for replacing any technology if needed.
- **Limited PPA duration:** The weighted average contract life is slightly below ten years which is on the low-end of what we have seen from peers. The Mars Hill's PPA at First Wind expires in February and cannot sell into ISO-New England without developing ~15 miles of additional transmission.
- **Transmission constraints:** Maine wind (Stetson and Rollins) assets face "significant curtailment" issues due to transmission constraints on the Keane Road transmission bottleneck. Management anticipates this being

Not all MWs are created equal.

~45% of the wind portfolio relies upon turbines from Clipper where First Wind does not have a warranty.

Peer YieldCos have portfolios with weighted average contract lives in the teens.

alleviated in 2015 due to continued work by Central Maine Power Company on the \$1.4Bn Maine Power Reliability Program (MPRP).

- **Battery supplier bankruptcy:** The Kaheawa Wind Power II (KWP II) project must maintain battery storage; however, the battery manufacturer has declared bankruptcy. Xtreme Power declared bankruptcy in January 2014 and was subsequently acquired by a Berlin battery startup for \$9.9Mn. TERP is pursuing alternative battery applications at the site, using the same D-Var playbook that it has used at Kahuku which had a "catastrophic fire" at its previous battery installation.

## Transaction Details

Ahead of the TERP deal we had thought that NRG Energy/NRG Yield would be the most likely acquirer of First Wind seeing their need to acquire a more meaningful wind development business (technically already acquired through EME, but still missing in our view); the SUNE/TERP acquisition thus was a negative for NYLD and peer YieldCos given the lost opportunity to acquire a meaningful wind portfolio.

The First Wind transaction was executed at a 9.2x EV / EBITDA multiple, a full two-turns below NRG Yield's Alta Wind portfolio and TERP management stated that First Wind would be immediately accretive. Management calculated an equity yield of ~9% based upon the post-financing CAFD but after adjusting for a distribution reserve, the **'true' CAFD equity yield is 7.8%** - a level that would be accretive for the YieldCos we monitor although light of the 13% yield on the Alta deal. The reason why NRG Yield was able to extract a higher level of accretion out of Alta relates to the financing profile around HoldCo debt. NRG Yield utilized 50% debt while TerraForm guided to only 25%. NRG Yield was able to finance the debt portion of the transaction with a 5.38% "green bond" while TerraForm guided to much more significant finance leakage with \$13.5Mn of leverage costs on only \$218Mn of imputed HoldCo debt (6.2% pre-tax). In January TERP issued \$800Mn of senior 2023 notes at 5.875%. Management has stated that it prefers to be conservative on debt financing and would maintain latitude within its ratios to enhance its credit rating, thereby improving the cost of debt. While some YieldCos do not seem to focus on debt ratings as much, TERP views its cost of debt as an important attribute.

Figure 34: TERP-First Wind Deal

TERP-FirstWind Deal (\$Mn)	
862	Purchase Price
644	Equity
218	Debt
862	EV
94	EBITDA (Guidance)
9.2x	EV / EBITDA
73	Gross CAFD (Guidance)
14	Less: Interest Expense
59	Post-Financing CAFD
9	Less: Distribution Reserve
50	True CAFD
2.3x	Effective Debt/EBITDA
3.0x	Debt / Gross CAFD
Guidance: 3-4x Debt / CAFD	
8.4%	Gross EV Yield
5.8%	Net EV Yield
11.3%	Gross Equity Yield
7.8%	Net Equity Yield*

Source: Company Filings and UBS Estimates  
\*Net Equity Yield is after Distribution Reserve

## Potential Droppable Assets at SunEdison

### Spelling out the pipeline:

Under the Project Support Agreement (PSA) SunEdison essentially grants exclusive transaction rights to TerraForm for specific projects in the sponsor's pipeline. If a third party makes an offer for a project then TERP will have the right to acquire it on substantially the same terms and price. The PSA specifies parameters for offerings:

- Minimum gross CAFD of **\$175Mn** offered by YE16: If SUNE has not dropped a minimum level it is required to continue offering projects until met
  - Projects with CAFD of at least \$75Mn: Must offer by YE15
  - Projects with CAFD of at least \$100Mn: Must offer by YE16

**As of November 2014 there was 1,716MW of call right projects with SUNE and the First Wind pipeline hold another 1,611MW.**



- Projects will be added quarterly and the Sponsor can remove projects if it believes they will not be completed as long as they will be replaced with approximately equivalent projects.

Within the PSA assets there are priced and unpriced renewables. The priced call right projects have a negotiated \$846.5Mn aggregate EV which relates to 379MW of US, UK, Chilean, and Canadian projects. The balance of projects will have prices negotiated between SUNE and TERP (or a third party expert if necessary) at market value. If the parties are unable to agree on a price then there is a risk TERP will not be able to purchase the projects; however, we have not seen that happen to date with the current YieldCos.

Beyond the PSA which lasts through the end of 2016, there is a traditional right of first offer (ROFO) agreement like we have seen with NRG Yield and other YieldCos. SunEdison's ROFO pipeline covers six-years after the IPO (July 2020)

**Figure 35: Visible SunEdison Projects**

Visible Drop Down Pipeline Sun Edison Project	As of January 2015 COD	Type	MW
Ontario 2015 Projects	2015/2016	Solar	16
UK Projects #1-13	2015	Solar	179
Chile Project #1	2015	Solar	42
US DG 2015 Projects	2015	Solar	119
Chile Project #2	2016	Solar	94
US AP North Lake I	2015	Solar	24
US Bluebird	2015	Solar	8
US River Mountains Solar	2015	Solar	18
US Kingfisher	2015	Solar	7
US Western Project #1	2016	Solar	156
US Island Project #1	2016	Solar	65
US Southwest Project #1	2016	Solar	100
US Utah Project #1	2016	Solar	163
US California Project #1	2016	Solar	55
Tenaska Imperial Solar	2016	Solar	73
US California Project #2	2016	Solar	46
US DG 2016 Projects	2016	Solar	55
US California Project #3-4	2016-2019	Solar	516
<b>Total</b>			<b>1,736</b>

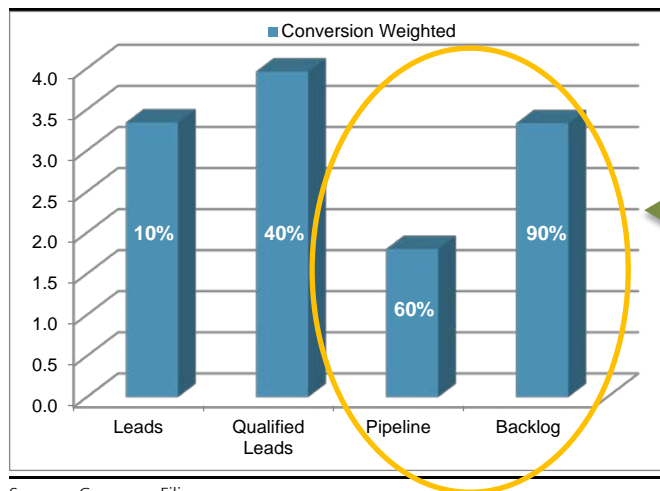
Source: Company Filings and UBS Estimates

**Figure 36: Visible First Wind Projects**

Visible Drop Down Pipeline FirstWind Project	As of January 2015 COD	Type	MW
Mililani Solar I	2015	Solar	26
Seven Sisters	2015	Solar	23
Kawailoa Solar	2016	Solar	65
Waiawa	2016	Solar	61
Mililani Solar II	2016	Solar	20
Four Brothers	2016	Solar	400
South Plains	2015	Wind	200
Oakfield	2015	Wind	148
South Plains II	2015	Wind	150
Bingham	2016	Wind	185
Hancock	2016	Wind	51
Weaver	2017	Wind	74
Rattlesnake	2017	Wind	62
Route 66 II	2017	Wind	100
Bowers	2017	Wind	48
<b>Total</b>			<b>1,611</b>

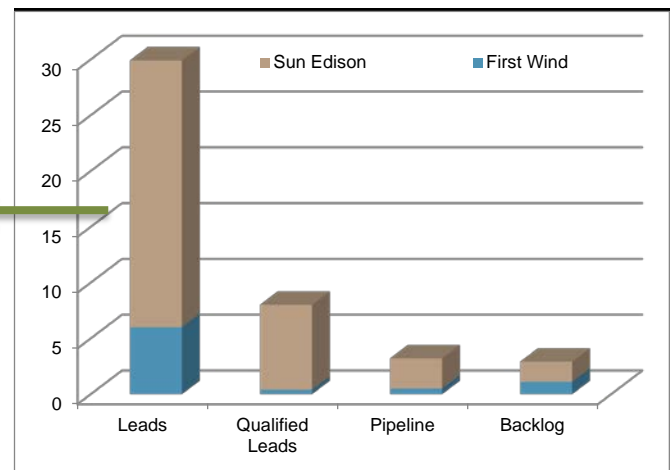
Source: Company Filings and UBS Estimates

Figure 37: Conversion Weighted MW: SUNE and First Wind as of First Wind deal



Source: Company Filings

Figure 38: Gross MW: SUNE and First Wind Conversion as of First Wind deal



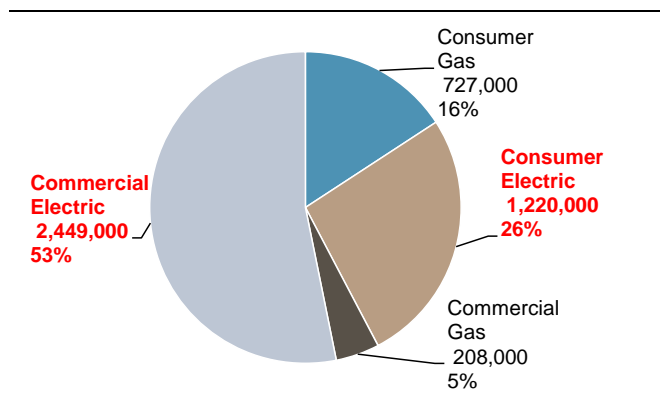
Source: Company Filings

## Potential Pipeline of Assets at Just Energy

As part of the Hudson Energy purchase, TerraForm entered into ROFO agreement with Hudson's owner Just Energy (JE) which covers specific assets in the Northeast (New Jersey, New York, Massachusetts, and Pennsylvania). In March 2014 Just Energy (JE) decided to exit its Hudson Energy commercial solar business due to the high capital requirements but retains a "strong interest in the sale of solar energy to residential homeowners."

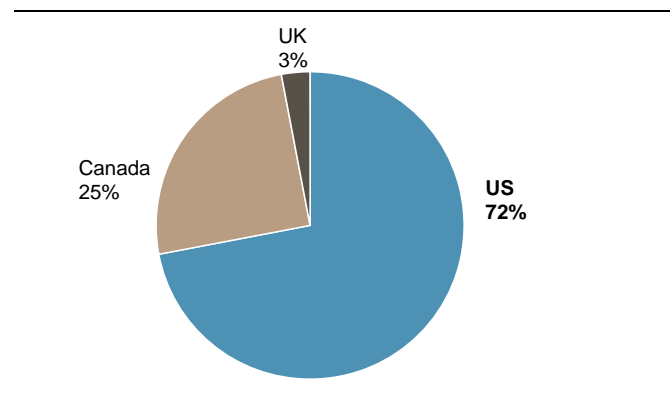
Just Energy is the fourth largest residential energy retailer (electric and gas) according to NRG.

Figure 39: Just Energy Customer Count 9/30/14



Source: Company Filings

Figure 40: Customer (RCE) Geography Spread



Source: Company Filings

## What is the strategy? "No capex"

Through its JustGreen brand JE sells renewable energy and there are ambitious goals to sell residential solar. From its recent MD&A disclosure, Just Energy "is exploring non-capital-intensive methods of offering residential solar and will provide shareholders with regular updates as to progress as it continues to review possible options for entry into this market. [emphasis added]." Currently there are 1.2Mn residential electric customers who management could target for rooftop solar, the vast majority of which are in the United States.

Currently there are 1.2Mn residential electric customers who management could target for rooftop solar.

In January JE entered into an agreement with Clean Power Finance (CPF) where Just Energy will originate residential solar contracts which CPF will finance and install. The partnership will help JE fulfill its "no capex" vision and the companies plan to rollout the strategy in California and New York with pilot plans in upcoming months. **While Just Energy is still in its early days here, this could be another avenue for solar drop-downs for TERP;** we look for updates as JE management progresses in the second half of the year. *Currently we do not ascribe any value to the pipeline for Just Energy in our TERP valuation.*

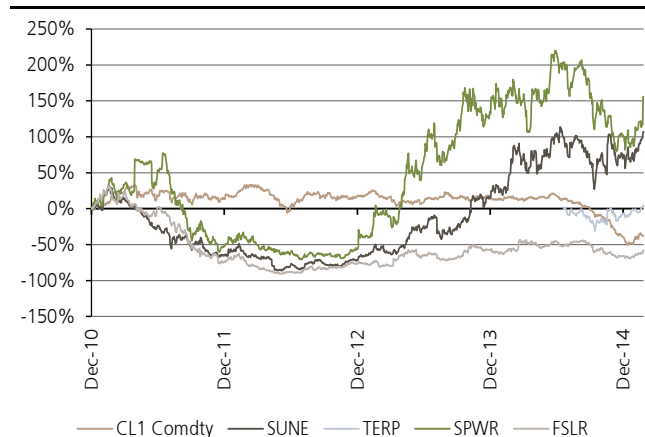
**CPF partnership enhances the solar potential for JE and in turn adds another avenue of potential ROFO assets for TERP.**

[Further details on Just Energy are available in our recent note \(Page 10\) following our meeting with management.](#)

## Breaking the Oil Chain

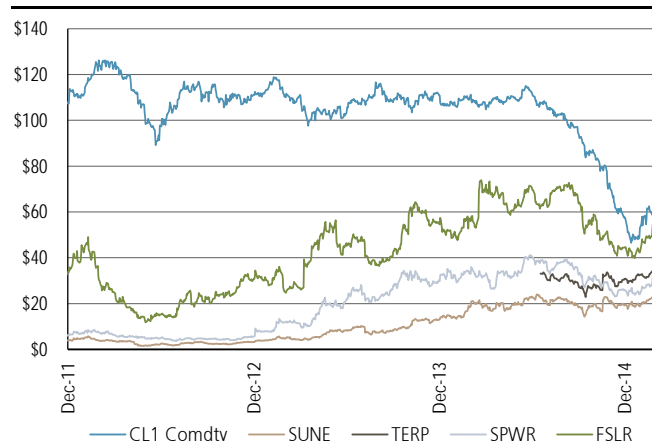
SunEdison management dedicated a section of its recent Capital Markets Analyst Day to debunking what they perceive as an undue pressure on shares where SUNE and TERP react negatively to declines in oil. As we mentioned previously, the continuous 48 US states are almost entirely de-linked from oil pricing and renewables are growing increasingly cost competitive in emerging markets.

**Figure 41: Price Return of Solar stocks vs Front Month Oil**



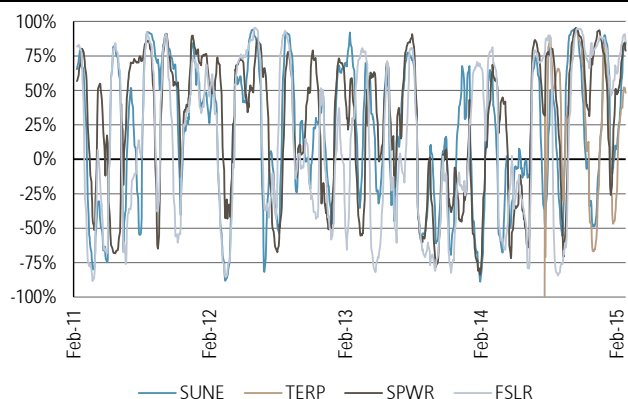
Source: Bloomberg and Factset

**Figure 42: Performance of Solar stocks vs Front Month Oil**



Source: Bloomberg and Factset

**Figure 43: Rolling Correlation: Solar Stocks vs Front Month Oil Prices over a 30 day window based on daily prices**



Source: Bloomberg, Factset and UBSe

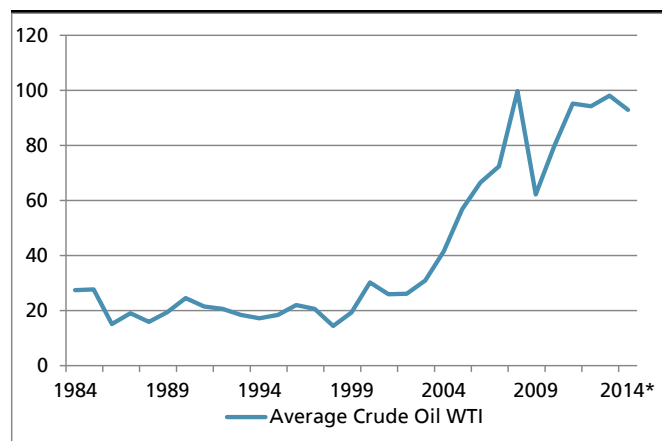
**Figure 44: Simple Correlation: Solar Stocks vs Front Month Oil Prices over 4-year period based on daily prices**

SUNE	TERP	SPWR	FSLR
-48%	-8%	-28%	10%

Source: Bloomberg, Factset and UBSe

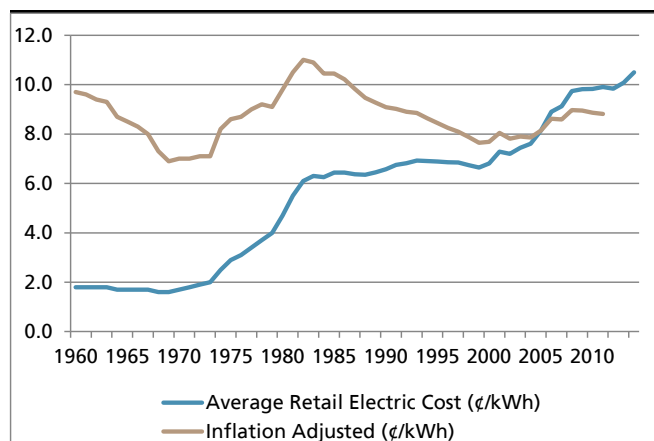
The low correlation between oil prices and US electricity prices is due to the fact that natural gas, coal, and nuclear comprise the vast majority of domestic generation along with increased spending for T&D. As more regulators become receptive to shifting more of the bill towards the fixed component, the variable energy portion in the US is becoming even less important.

**Figure 45: Crude Oil WTI Continuous (\$bbl)**



Source: FactSet

**Figure 46: Average Retail Electric Cost (¢/kWh)**



Source: EIA

# Appendix:

## Projected Financials

Figure 47: TerraForm Power Income Statement

TerraForm Power (TERP) - UBS <sub>e</sub>								
	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast
In Million \$	FY12 Dec-12	FY13 Dec-13	FY14 Dec-14	FY15 Dec-15	FY16 Dec-16	FY17 Dec-17	FY18 Dec-18	FY19 Dec-19
Income from Operations	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19
<b>Operating Revenues</b>								
Energy	8.19	8.93	\$93	\$415	593	751	1,251	1,620
Incentives	5.93	7.61	\$31	\$69	92	129	223	313
Incentive-affiliate	1.57	0.93	\$1	\$2	2	2	2	2
<b>Total Operating Revenues</b>	<b>15.69</b>	<b>17.47</b>	<b>\$126</b>	<b>\$486</b>	<b>687</b>	<b>882</b>	<b>1,476</b>	<b>1,935</b>
<b>Guidance</b>				<b>\$484</b>				
<b>Operating costs and expenses</b>								
Cost of operations	0.84	1.02	\$15	\$78	104	146	252	354
Cost of operations-affiliate	0.68	0.91	\$3	\$5	6	9	15	22
Total	\$2	\$2	\$18	\$83	111	155	267	376
<b>Guidance</b>				<b>\$100</b>				
General and Administrative	0.18	0.29	\$27	\$15	15	15	15	15
General and Administrative-affiliate	4.43	5.16	\$12	\$5	5	5	5	5
Total	\$5	\$5	\$39	\$20	20	20	20	20
<b>Guidance</b>				<b>\$20</b>				
Acquisition costs			\$15	\$18	18	18	18	18
Acquisition costs - affiliate			\$0	\$0	0	0	0	0
Formation and offering related fees and expenses			\$6	\$2	2	2	2	2
	\$0	\$0	\$21	\$20	20	20	20	20
Depreciation and accretion	4.27	4.96	\$41	\$175	237	290	463	589
<b>Guidance</b>				<b>\$174</b>				
<b>Total operating costs and expenses</b>	<b>\$10</b>	<b>\$12</b>	<b>\$119</b>	<b>\$297</b>	<b>387</b>	<b>485</b>	<b>770</b>	<b>1,005</b>
<b>Guidance</b>				<b>\$294</b>				
<b>Operating Income</b>	<b>5.31</b>	<b>5.13</b>	<b>\$7</b>	<b>\$189</b>	<b>\$300</b>	<b>\$397</b>	<b>\$706</b>	<b>\$930</b>
<b>Guidance</b>				<b>\$189</b>				
<b>Adjusted EBITDA</b>				<b>\$374</b>	<b>547</b>	<b>697</b>	<b>1,179</b>	<b>1,529</b>
<b>Guidance</b>				<b>\$374</b>				
<b>Other expense</b>								
Loss on extinguishment of debt		0.00	(\$10)	\$0	\$0	\$0	\$0	\$0
Gain on foreign currency exchange	0.00	(0.77)	\$16	\$0	\$0	\$0	\$0	\$0
<b>Other Expenses</b>			<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
Total other expenses, net	\$0	(\$1)	\$7	\$0	\$0	\$0	\$0	\$0
<b>EBIT</b>	<b>\$5</b>	<b>\$6</b>	<b>\$0</b>	<b>\$189</b>	<b>\$300</b>	<b>\$397</b>	<b>\$706</b>	<b>\$930</b>
Interest expense, net	5.70	6.27	84	\$120	193	241	415	535
<b>Guidance</b>				<b>\$121</b>				
<b>EBT</b>	<b>(\$0.39)</b>	<b>(\$0.37)</b>	<b>(\$84)</b>	<b>\$69</b>	<b>107</b>	<b>156</b>	<b>290</b>	<b>396</b>
Income tax provision (benefit)	(1.27)	(0.09)	(\$8)	\$28	0	0	0	0
<b>Guidance</b>				<b>\$27</b>				
			\$0	\$0				
<b>Net Income (Loss)</b>	<b>\$1</b>	<b>(\$0)</b>	<b>(\$76)</b>	<b>\$41</b>	<b>107</b>	<b>156</b>	<b>290</b>	<b>396</b>
<b>Guidance</b>				<b>\$42</b>				
Less: Predecessor Income (Loss) prior to IPO			\$6					
<b>Net Loss Subsequent to IPO</b>			<b>(\$82)</b>					
Non Controlling interest	0.00	0.00	(\$3)	\$28	28	28	28	28
<b>Guidance</b>				<b>\$28</b>				
					50%	50%	50%	50%
<b>Net Income after Non Controlling Interest</b>			<b>(\$79)</b>	<b>\$14</b>	<b>79</b>	<b>129</b>	<b>263</b>	<b>368</b>
IDR				\$0	5	37	139	258
<b>Net Income attributable to Common Stock</b>	<b>0.88</b>	<b>(0.28)</b>	<b>(\$2)</b>	<b>\$14</b>	<b>74</b>	<b>92</b>	<b>124</b>	<b>110</b>
<b>EPS</b>			<b>(\$0.03)</b>	<b>\$0.23</b>	<b>\$0.99</b>	<b>\$0.54</b>	<b>\$0.54</b>	<b>\$0.40</b>
Common Stock A O/S			50	60	76	170	230	275
<b>DPS</b>			<b>\$0.27</b>	<b>\$1.30</b>	<b>\$1.53</b>	<b>\$1.90</b>	<b>\$2.28</b>	<b>\$2.61</b>
<b>Guidance</b>			<b>\$1.08</b>	<b>\$1.30</b>	<b>1.53</b>	<b>1.90</b>	<b>2.28</b>	<b>2.61</b>

Source: Company Filings and UBS Estimates

Figure 48: TerraForm Power Balance Sheet

TerraForm Power (TERP) - UBSe								
BALANCE SHEET	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19
<b>Assets</b>								
Cash and Cash equivalents	0	1	468	447	451	404	383	183
Restricted cash	5	62	71	81	81	81	81	81
Accounts Receivable	1	2	32	165	234	300	502	658
Deferred income taxes	0	0	-	-	-	-	-	-
VAT Recievable		38	-	-	-	-	-	-
Prepayments and other current assets	4	3	45	35	35	35	35	35
<b>Total Current Assets</b>	<b>9</b>	<b>106</b>	<b>616</b>	<b>728</b>	<b>800</b>	<b>820</b>	<b>1,000</b>	<b>957</b>
Property and equipment, net	112	407	2,308	3,920	5,240	6,306	10,178	12,740
Intangible assets	23	23	360	360	360	360	360	360
Goodwill			-	-	-	-	-	-
Deferred financing costs, net	2	12	-	-	-	-	-	-
Restricted cash		7	-	-	-	-	-	-
Other assets	14	11	105	105	105	105	105	105
<b>Total Assets</b>	<b>159</b>	<b>567</b>	<b>3,389</b>	<b>5,113</b>	<b>6,506</b>	<b>7,592</b>	<b>11,643</b>	<b>14,162</b>
<b>Liabilities and Equity</b>								
Current portion of long term debt	1	37	73	111	124	217	292	375
Current portion of capital lease obligations	2	1	-	-	-	-	-	-
Accounts payable	1	1	116	243	344	441	738	968
Accrued interest		7	-	-	-	-	-	-
Accrued exp. and other current liabilities		1	-	-	-	-	-	-
Deferred purchase price for acquisitions		-	-	-	-	-	-	-
Deferred revenue	0	0	-	3	3	3	3	3
Due to SunEdison and affiliates	6	82	-	-	-	-	-	-
<b>Total Current Liabilities</b>	<b>10</b>	<b>129</b>	<b>189</b>	<b>357</b>	<b>471</b>	<b>661</b>	<b>1,033</b>	<b>1,346</b>
Long term debt	74	371	1,525	2,659	3,622	4,354	7,097	8,932
Long term capital lease obligations	29	28	-	-	-	-	-	-
Deferred revenue	5	5	-	-	-	-	-	-
Deferred income taxes	4	7	-	42	42	42	92	142
Other LT Liabilities			154	154	154	154	154	154
Asset retirement obligations	6	11	-	-	-	-	-	-
<b>Total Liabilities</b>	<b>129</b>	<b>551</b>	<b>1,869</b>	<b>3,213</b>	<b>4,289</b>	<b>5,211</b>	<b>8,377</b>	<b>10,574</b>
<b>Equity</b>								
Net parent investment	30	3						
Accumulated other comprehensive income	-	-	314					
Total TerraForm Power LLC equity		3	314					
<u>Non controlling interest</u>	-	13	1,206	1,234	1,261	1,289	1,316	1,344
<b>Total Equity</b>	<b>30</b>	<b>15</b>	<b>1,520</b>	<b>1,900</b>	<b>2,217</b>	<b>2,381</b>	<b>3,266</b>	<b>3,588</b>
<b>Total Liabilities and Equity</b>	<b>159</b>	<b>567</b>	<b>3,389</b>	<b>5,113</b>	<b>6,506</b>	<b>7,592</b>	<b>11,643</b>	<b>14,162</b>

Source: Company Filings and UBS Estimates

**Figure 49: TerraForm Power Pro-Forma Debt Capitalization**

Pro Forma Capitalization		Pro-Forma 9/30/2014
<b>Project Level Debt</b>		
Mt Signal		413
CAP		213
Regulus		135
Nellis		46
Summit Solar US		24
California Public Institutions		17
Enfinity		5
US Projects 2009-2013		9
Hudson Energy		21
First Wind		-
<b>Total</b>		<b>884</b>
<b>Parent HoldCo Debt</b>		
Revolver		0
Senior Notes (Due 2023)		800
<b>Consolidated Debt</b>		<b>1,684</b>
<b>Targets:</b>		
Parent HoldCo Net Debt / Gross CAFD	3.0x-3.5x	
Consolidated Leverage	5.0x-5.5x	

Source: Company Filings

Figure 50: TerraForm Power Cash Flow

TerraForm Power (TERP) - UBSe								
CASH FLOW STATEMENT	Dec-12	Dec-13	FY14	FY15	FY16	FY17	FY18	FY19
<b>Cash flows from operating activities</b>								
Net loss	1	(0)	- 76	41	107	156	290	396
<i>Adjustment to reconcile net income to net cash</i>								
Non cash incentive revenue	(2)	(2)						
Non cash interest expense	1	1						
Depreciation and accretion	4	5	41	175	237	290	463	589
Loss on foreign currency exchange	0	(1)						
Deferred taxes and others	(1)	(0)		45	0	0	50	50
<i>Changes in assets and liabilities</i>			121	- 4	32	31	95	74
Accounts receivable	0	(1)						
VAT receivable	(1)	(34)						
Prepaid expenses and other current assets	0	0						
Accounts payable	(1)	5						
Deferred revenue	0	1						
Due to SunEdison and affiliates	1	19						
Others	0	0						
<b>Net cash used in operating activities</b>	<b>3</b>	<b>(7)</b>	<b>85</b>	<b>257</b>	<b>375</b>	<b>478</b>	<b>898</b>	<b>1,108</b>
<b>Cash flows from investing activities</b>								
Cash paid for SunEdison and third parties for solar	(2)	(205)	- 614					
Acquisitions of solar systems	5	0	- 831					
Change in restricted cash	(4)	(59)	-					
<b>Net cash used in investing activities</b>	<b>(0)</b>	<b>(264)</b>	<b>- 1,474</b>	<b>- 1,787</b>	<b>(1,557)</b>	<b>(1,356)</b>	<b>(4,335)</b>	<b>(3,151)</b>
<b>Cash flows from financing activities</b>								
Principal payments on long term debt	(1)	(3)	- -	78	(114)	(125)	(215)	(288)
Change in restricted cash for principal payments	0	3	-					
Repayments of solar energy system financing lease	(2)	(2)	-					
Proceeds from long term debt	0	305	1,190	1,251	1,090	949	3,034	2,206
Contribution from non controlling interest	0	13	-					
Payment of deferred financing costs	(0)	(11)	-					
Net SunEdison investment	(1)	(33)	-	-	0	0	0	0
Distribution to non controlling interest	0	0	- -	28	(28)	(28)	(28)	(28)
Scheduled Project level Debt Service and repayments								
Distributions to common unit holders			- 30	- 170	(229)	(371)	(678)	(992)
Proceeds from Issuance of Common Stock	0	0	697	536	467	407	1,300	945
<b>Net cash provided by financing activities</b>	<b>(2)</b>	<b>272</b>	<b>1,856</b>	<b>1,511</b>	<b>1,186</b>	<b>832</b>	<b>3,414</b>	<b>1,844</b>
Net increase in cash and cash equivalents	0	1	468	- 18	4	(47)	(22)	(199)
Effect of exchange rate changes	0	0	- 1	-	0	0	0	0
Cash and cash equivalents at beginning of period	0	0	1	468	447	451	404	383
<b>Cash and cash equivalents at end of period</b>	<b>0</b>	<b>1</b>	<b>468</b>	<b>450</b>	<b>451</b>	<b>404</b>	<b>383</b>	<b>183</b>

Source: Company Filings and UBS Estimates



## One Page Question Bank

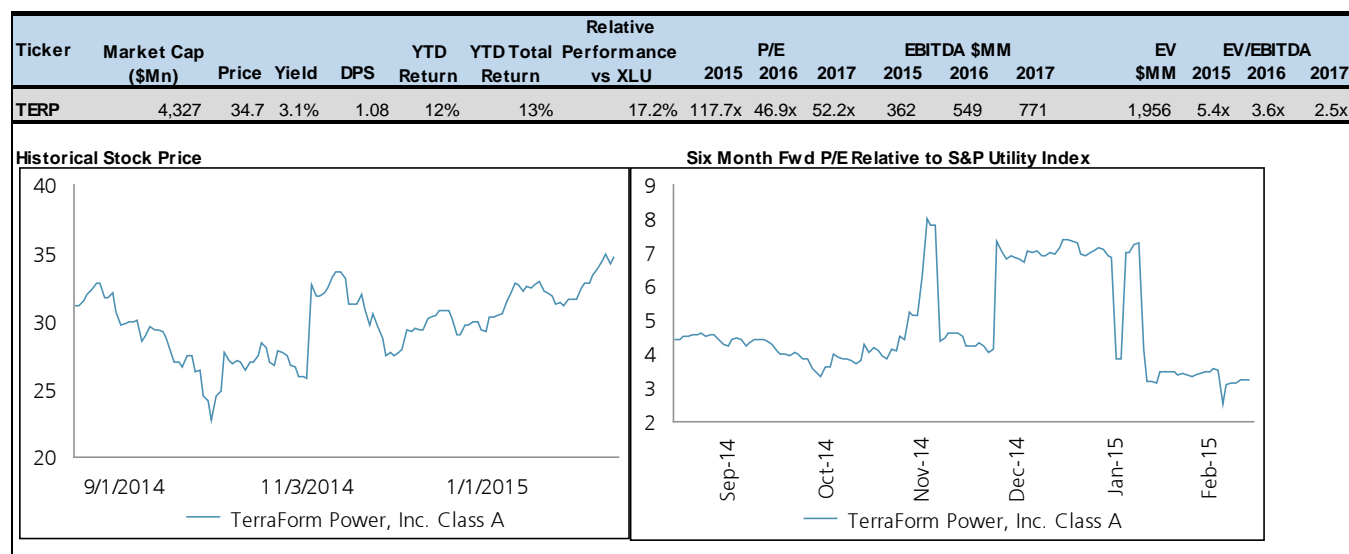
- Where do you see the greatest growth opportunities in terms of asset classes and geographies? How do you anticipate the step-down of the ITC in 2017 and expiration of the PTC influencing the mix going forward?
- What is the outlook like for M&A? Do you see opportunities to partner with utilities? Do you have a preferred geography or asset type? Are there certain markets or assets that you would not consider at this time? Do you have a desire to expand beyond wind and solar assets? What about other renewables? Please describe the different return profiles between utility scale solar, DG solar, and wind opportunities.
- How exposed are you to foreign currency and inflation trends in your markets? Can you please discuss some of the key contracts in more details (i.e. whether US-dollar denominated, indexed for inflation, etc.)
- Does the addition of wind assets allow you to increase your distribution payout ratio given the cash contribution in the shoulder months for solar?
- What is the latest magnitude of leads, qualified leads, pipeline, and backlog at SunEdison? How has this changed over the past twelve months?
- What is the scale of opportunity with the JustEnergy ROFO?
- What are the key metrics you target for leverage? Are you comfortable with your debt position currently?
- Please provide details of the drop down warehouse facility? How does this advantage you versus other YieldCos?

We provide a one-page question bank to provide questions for those meeting with management at the UBS Conference and other industry events.

### Key Guidance Metrics:

- Dividend per Share: 2015: \$1.30; 2017: \$1.90; 2019: \$2.61
- Adj. EBITDA: 2015: \$374Mn
- CAFD: 2015: \$214Mn

Figure 51: TerraForm Power - Basic Overview



Source: FactSet

## Industry Overview: Renewables on the Road to Grid Parity

Renewable energy is reshaping the electric generating industry as new technologies with declining cost curves are entering the market at the same time that energy efficiency and demand response are breaking the historical correlation between GDP and electrical demand growth. We have seen this trend in its most extreme forms in Germany and domestically in California and Hawaii but industry sources expect renewables to be cost competitive in more and more locations. Renewables are most economical in regions with high electric costs – i.e. oil based generation (such as Hawaii and emerging markets).

Renewable power has ~\$0 variable cost of energy but is an intermittent power source (i.e. needs sunshine/wind) compared with conventional power sources that are capable of running 'baseload' such as coal, nuclear, and natural gas. The economics of renewables are still driven largely by tax credits and incentives:

- **Solar:** Investment Tax Credit (ITC): 30% tax credit through '16; 10% in '17
- **Wind:** Production Tax Credit (PTC): 2.3¢/kWh with grandfathering for YE14
- **State** incentives exist as well (Ex. Renewable Energy Credits in NJ and MA)

The expiration/step-down in credits is expected to slow growth in the intermediate-term but will be offset partially by continued technological improvements (lower costs, more generation efficiency, etc.). Aside from pure economics the growth in renewables is due to environmental policy that seeks to curb carbon and other emissions. Most states have Renewable Portfolio Standards (RPS) requiring X% of generation come from renewable sources (typically solar and wind) by 20XX. For example, California has a 33% RPS by 2020 and Michigan has a 10% RPS by 2015.

We include proposed renewable targets by state. Broadly, the targets are calculated as a function of existing RPS requirements, through 2020. Modest incremental deployment is assumed for the purpose of 2030 targets, but the renewable energy aspect effectively adds an element of teeth to the existing RPS policies in place across a range of states. Notably, California is assumed only at 20%, despite having a 33% standard for 2020. The only states to see measurable growth from 2020 through 2030 appear to be the Northeast (MA, CT, NY, PA, and NJ) where penetration is modelled to significantly increase. We expect many states to reassess their RPS in the near future with initial goals having been met such as the aforementioned Michigan and Hawaii. In February West Virginia actually repealed the state's RPS which had required 10%/15%/25% renewables by 2015/2020/2025; however, we note the overwhelming trend is towards increases rather than to rollback progress made to date.

**We continue to be bullish on renewables due to a declining cost curve and government incentives.**

**Improving technology and lower costs will help offset a loss of tax incentives.**

**Renewable Portfolio Standards: Remain in place and set to increase in many states.**

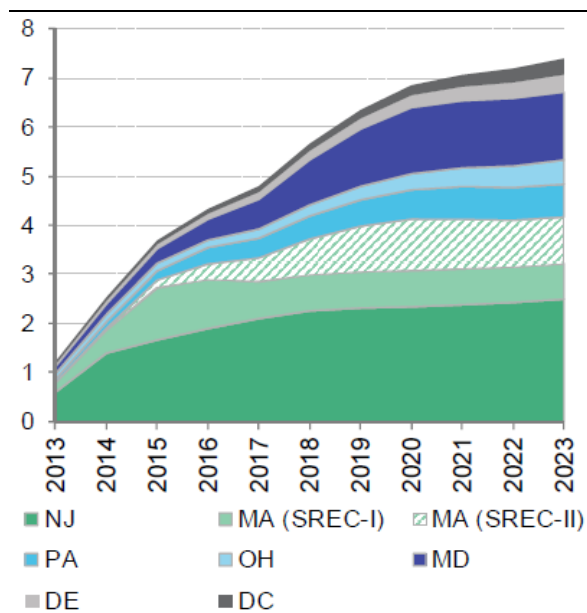
**Figure 52: State Renewable Energy Generation Levels for State Goal Development  
(% of Annual Generation) as of 2014**

% of Annual Generation State	Proposed Goals			Alternate Goals	
	2012	Interim Level	Final Level	Interim Level *	Final Level
Alabama	2	6	9	4	5
Alaska	1	2	2	1	1
Arizona	2	3	4	3	3
Arkansas	3	5	7	4	5
California	15	20	21	20	21
Colorado	12	19	21	17	19
Connecticut	2	5	9	4	5
Delaware	2	7	12	4	5
Florida	2	6	10	4	6
Georgia	3	8	10	6	7
Hawaii	9	10	10	10	10
Idaho	16	21	21	21	21
Illinois	4	7	9	6	7
Indiana	3	5	7	4	5
Iowa	25	15	15	15	15
Kansas	12	19	20	19	20
Kentucky	0	1	2	1	1
Louisiana	2	5	7	4	4
Maine	28	25	25	25	25
Maryland	2	10	16	6	8
Massachusetts	5	15	24	11	13
Michigan	3	6	7	5	6
Minnesota	18	15	15	15	15
Mississippi	3	8	10	6	8
Missouri	1	2	3	2	2
Montana	5	8	10	6	7
Nebraska	4	8	11	6	7
Nevada	8	14	18	12	14
New Hampshire	7	19	25	15	19
New Jersey	2	8	16	5	7
New Mexico	11	18	21	16	18
New York	4	11	18	8	10
North Carolina	2	7	10	5	6
North Dakota	15	15	15	15	15
Ohio	1	6	11	4	5
Oklahoma	11	19	20	18	20
Oregon	12	19	21	17	19
Pennsylvania	2	9	16	5	7
Rhode Island	1	4	6	3	3
South Carolina	2	7	10	5	6
South Dakota	24	15	15	15	15
Tennessee	1	3	6	2	3
Texas	8	16	20	13	15
Utah	3	5	7	4	5
Virginia	3	12	16	9	12
Washington	7	12	15	10	11
West Virginia	2	8	14	5	6
Wisconsin	5	8	11	7	8
Wyoming	9	15	19	13	14

Source: EPA

Further details are available in our [Global Q-Series: Can Utilities Survive in Their Current Form?](#)

**Figure 53: Solar Carve-Out RPS Demand (TWh)**

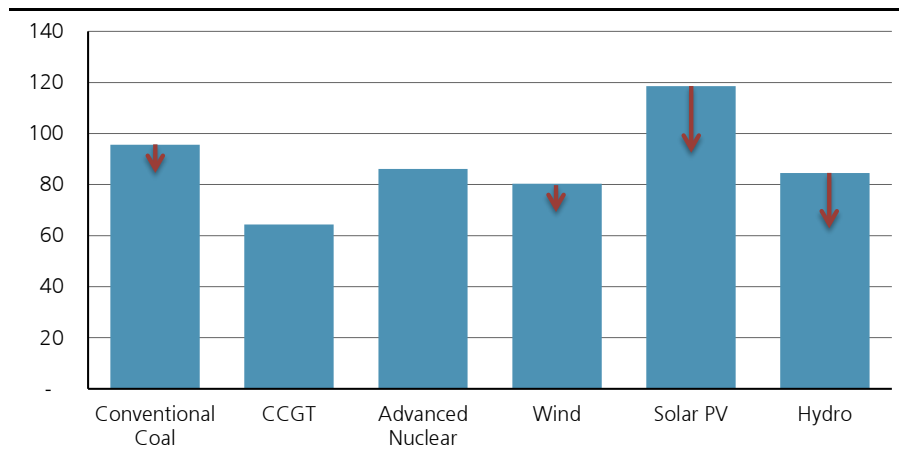


Source: Bloomberg New Energy Finance & EIA – Reflects RPS under legislation as of January 2015

RPS focused demand will continue to drive investment at least into the beginning of the next decade.

## Across the board renewables are becoming more economic

**Figure 54: U.S. average subsidized levelized costs (2012 \$/MWh) for utility scale plants entering service in 2019**



Source: EIA (2014) and UBS Estimates

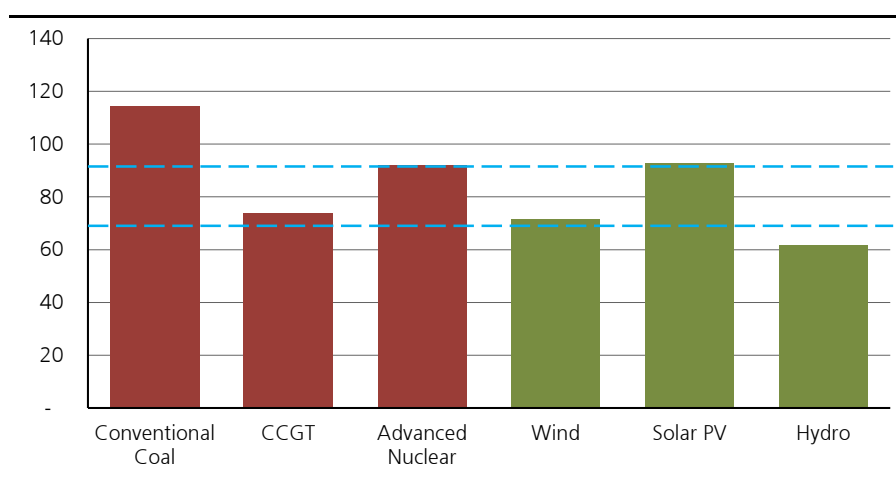
The Levelized Cost of Energy (LCOE) is the most frequently cited metric (although not without flaws) to compare cost-competitiveness across technology types and shows that renewables are rapidly approaching grid parity against conventional generation. The EIA estimates that the average 2019 subsidized LCOE (10% ITC and nuclear PTC) have the cost of wind below coal and nuclear but still well higher than an efficient natural gas plant. Without the 30% ITC, the cost of solar PV is notably above average. Most importantly, the trend versus the 2018 data shows 6%-10% reductions YoY for all renewables (solar PV showing the greatest gains).

Wind is estimated to be cost competitive against many forms of generation in 2019.

On the previous figure we present EIA's estimation of the subsidized regional minimums to illustrate a 'best case' scenario adjusting for access to transmission, access to fuel, etc. using the **red arrows** (the regional best case for CCGT and nuclear was largely de minimus). This shows that utility scale PV solar in premium locations at a 93 LCOE is more affordable than expensive conventional coal (114) and nearly at parity with nuclear (92). CCGTs remain significantly cheaper than solar even in a worst-case scenario but interesting premium wind essentially can be cost competitive against. All of this data assumes that neither the PTC nor the ITC is extended in any form, factors that would only enhance the cost competitiveness of solar and wind. Renewable industry groups such as AWEA have proposed multi-year roll-offs for the PTC and a grandfathering for the ITC, attempts to offset a 'cliff'.

Even-though conventional generation is lower cost, the declining cost of renewables are expected to decline more rapidly.

**Figure 55: U.S. regional maximum conventional subsidized LCOE (2012 \$/MWh) vs regional minimum for utility scale renewables plants entering service in '19**



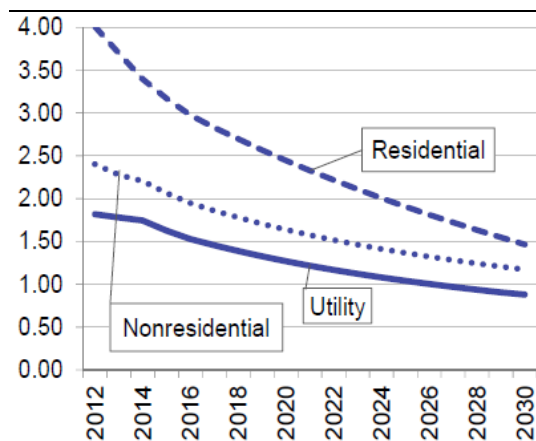
Source: EIA (2014) and UBS Estimates

Growth should accelerate in 2016/2017 before picking-up again as the costs decline offset the loss of tax credits. With technology costs continuing to drop we anticipate that Power Purchase Agreement (PPA) prices will continue to decline through 2017, driving an accelerating deployment of wind projects. A key question will be whether windy states (like KS, OK, etc.) will continue to contract incrementally for projects beyond RPS requirements just to lock in PTC benefits. Meaningful uptick remains predicated on filling incremental demand growth (if any).

Bloomberg New Energy Finance estimates that the levelized cost of electricity for solar PV in North Carolina (generic portfolio in attractive state) will continue to decline steadily after overcoming the ITC reduction. BNEF projects declines in panel costs to equate to ~15-20¢ through 2020, off their current levels of ~50¢/Watt to arrive at the 30-35¢/Watt range.

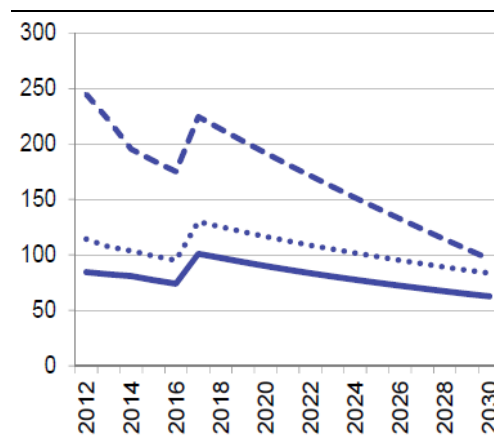
**All-in, we asked investors of late how much cost reductions could be?** There appears confidence for a \$0.30-0.40/Watt reduction in utility-scale economics through the ~3-year view (off a baseline of a ~\$1.75/Watt today). We see this translating to a continued high single-digit CAGR reduction in costs through the medium term (with higher rates likely for residential and DG solutions).

**Figure 56: BNEF Projections on Cost (\$/Watt)**



Source: BNEF Presentation

**Figure 57: BNEF Projections on Cost (LCOE on \$/MWh)**



Source: BNEF Presentation

Further details are available in the full note with transcript, ['Warming Up to the Solar Potential'](#).

## What about distributed solar?

Distributed solar installations are frequently lower cost to end consumers due to the lack of additional transmission and distribution (T&D) spending as well as net metering policies that allow consumers to sell back into the grid at the full residential price (not just the avoided cost of energy). Incremental transmission costs are only 1-2% of the LCOE for conventional generation whereas they are 3-4% of the LCOE for utility scale solar PV and onshore wind.

Falling costs have been a big driver underpinning solar growth, with solar PV prices down 75% since 2001 from about \$10/watt installed down to \$2.50/watt lead to this point largely by scale – SEIA believes the DOE's SunShot goal of prices at between \$1 and \$1.60/watt may soon be possible. This ~20- 25% YoY decline in costs is across the board, but utility scale is the cheapest, already around \$1.70 per watt on average for installed cost. Although historically the cost driver has been module prices, expect cost savings into the next few years to be driven by savings on more standardized/cheaper financing as well as lower inverter prices, along with efficiencies in installation processes (cheaper and also less time consuming).

Further details are available in our note ['The Solar World According to SEIA'](#).

## Winning the cost of capital battle

As we indicated in a previous note, ['Can REITs and UTEs Play Together?'](#), the White House stated last May that the Treasury Department and the IRS intend to provide updated guidance on the status of renewables eligibility as 'real property' within a REIT. With sun setting on federal tax credits, there has been open question of late of how exactly the administration would subsidize the sector. While we understand many in the sector readily see solar as potentially qualifying as 'real property', particularly which is mounted onto existing real estate, there remains some questions on whether ground-mounted panels could be eligible as well (further ambiguity exists between the modules and the racking itself). It is less clear whether the IRS will apply a comparable treatment to the wind industry, deeming it as 'real property' too; we believe there is a strong need to distinguish along technology types for REIT classification (further eligibility criteria will need to be extended to geothermal, etc. and the degree of 'permanency'). While we had

**Transmission investment for utility-scale solar can be four-times greater than for a conventional gas plant.**

**Declining costs complement favorable policy support for DG.**

**REITs: Still A Possibility for Some Structures?**

been previously skeptical of a wholesale addition of the renewable sector into a new tax structure given the continued talk of all-encompassing 'tax reform' and seeming concern over regulatory 'creep' across broad swaths of the economy, it appears quite likely to become a reality for the niche; there is no need enabling legislation. As a reminder the pending tax-extendors bill would provide an extension of the current PTC structure for a further two-year period. Overall, we are more constructive on the implications for the solar sector, given the much clearer path to qualifying for REIT status. But potential for wind assets still exists.

YieldCos would definitely benefit from this development. Why? 1) Because the value of wind assets coming off their ten-year PTC will continue to benefit from a tax-advantaged status, lifting valuations; and 2) this will only accelerate the consolidation/maturation of the renewable sector into larger entities, with traditional C-Corps likely to sell to REIT 'consolidators', effectively arbitraging out the tax benefits. The argument is that real tax savings provided by a REIT structure (rather than just simple multiple/cost-of-capital arbitrage with YieldCos today) will enable the consolidation cycle, much as has been seen in the last decade with MLPs. The question remains how many existing renewable companies will convert to REITs, and how many YieldCos will be 'refiled' as REITs out-of-the-gate.

### **Why wait for a REIT when an MLP is an option?**

The verdict is still out regarding REITs but following our latest meeting with the FERC Commissioners in January we do not think the country is ready for yet another tax-advantaged vehicle. We understand there remains wide debate across the administration on the subject, suggesting to us limited latitude for REITs or MLPs to find legislative support to get off the ground. We acknowledge that many will continue to push the concept through applying for Private Letter Rulings (PLRs) for such status – such as Renewable Energy Trust (RET), a potential YieldCo/REIT structure for renewables, but do not believe this will be pervasive.

**What about tax vehicles: Can renewables get the same treatment as Oil & Gas?**

**Solar REIT clarification coming too from IRS?** Having said that, our latest discussions in the industry around REIT structures suggest that IRS could be preparing further clarification as to *what* qualifies in a solar REIT structure later this Fall. Specifically, it is expected that both utility scale and distributed sources would qualify. Additionally, the REIT clarification would also remove the requirement that solar REIT owners *also* own the underlying land. Such a clarification could open up the sector to solar leasing companies being eligible. The question remains what the administration will do to support renewables beyond the existing expiration of the tax credit schemes in place today.

More details on our takeaway from the FERC meetings are available in our note ['Taking The Polar Express From Washington'](#).

### **Obama's latest budget strongly supportive of renewables but is expected to face significant challenge**

President Obama's proposed \$4Tn 2016 budget involves significant changes for the energy sector including reductions for fossil fuels and increases for renewables. The most relevant change for renewables would be the permanent extensions of the PTC and ITC. While Obama and the Democrats likely proposed a steep request given Republican control of both the House and Senate, this budget does present an opportunity for a more permanent solution to the PTC/ITC with certainty provided on a multi-year basis.

**Obama proposed a permanent extension of PTC/ITC – a steep ask from a Republican congress.**

## YieldCo: Debunking the Myth

2014 was full of buzz surrounding YieldCos with numerous vehicles coming to the market and 2015 looks to be a period where the new shine could start to wear off. There seems to be some confusion still, so we will start off by explaining what a YieldCo is and then will share our views on some of the benefits and potential risks associated with investing in YieldCos.

YieldCos remain a top discussion topic in conversations with our clients.

### What Is a YieldCo?

The core idea behind a YieldCo is simple: provide investors with access to steady contracted cash flows in exchange for a lower cost of capital for power developers of wind, solar, and some conventional generation portfolios. YieldCo's work as follows: a power producer places assets that have long-term Purchase Power Agreements (PPAs) with creditworthy counterparties into a holding company (that would be the YieldCo). The power producer then sells a minority interest in the YieldCo to the public in order to gain access to capital markets. Access to public debt and equity grants the YieldCos with the ability to finance accretive sponsor drop-downs and third party acquisitions. Add some sweeteners such as avoiding paying income tax (thanks to NOLs) or a clearer path to growth (through ROFO agreements), and you get a recipe for a successful new asset class in a yield-starved market. The desire for yield has only increased in the past half-year with risk-free yields declining even further.

We note that the tax advantages of YieldCo's are not unique to the structure, as they are with MLPs. YieldCo's do not enjoy any cost of capital advantage from tax breaks over and above the portfolio's pre-YieldCo status aside from those inherent in partnership federal tax accounting.

### All YieldCos Are Not Created Equal

We discuss the primary factors which distinguish YieldCos.

- **Geography:** US focused renewable investments tend to have the highest credit quality counterparties, greatest degree of certainty, and low correlation with oil. Opportunities in other OECD countries also offer a relatively low degree of risk as well as greater return profile. Looking at emerging market opportunities, the risk profile is greater (as expected) but growth in renewables is more abundant given higher electric pricing in many countries.
- **Growth Rate:** The 'top' YieldCos offer double-digit growth rates with some deviations between peers (i.e. 10% vs 19%). The lower quality YieldCos have growth rates below 10% and tend to trade at notably higher yields due to the reduce growth rate prospects.
- **Sponsor Quality:** On one end of the spectrum are sponsors with a deep inventory of assets that are already operational that can be dropped-down into the YieldCo whereas other sponsors (such as SunEdison) need to continue to develop projects to feed the growth of the YieldCo. The market tends to reward YieldCos with more predictable and visible cash flows which are based on the available assets at the sponsor.
- **Asset Types:** YieldCos tend to focus on wind and solar renewables but some include conventional fossil assets. NEP in particular has said that despite its inventory of contracted fossil asset it plans to keep the YieldCo as 'pure' with just renewable assets as it appeals to a certain investors. Abengoa Yield has



been the most vocal about expanding into non-traditional assets such as water desalination and transmission.

- **Ownership Structure and IDRs:** For example NEP and TERP have IDRs while the earlier YieldCos do not. Another important distinguishing factor is the voting control of YieldCos. SUNE is advantaged again here as it has 10x preferred voting rights for TerraForm which grants consolidating control.

## Why Are YieldCos So Popular?

### (1) Yield AND Growth

YieldCos seem to offer the best of both worlds: providing appreciable, predictable income while promising growth rarely seen in the contracted power generation business, with target DPU growth in the range of 10% to 18%, and sometimes higher. Today's low interest rate environment makes investors even fonder of this type of vehicle.

Is it a Yield Vehicle or a Growth Vehicle? More appropriately should be called 'GrowthCo'

We note however that most YieldCos rely on their parent dropping ROFO assets to fuel their growth. In essence, distribution growth is an engineered phenomenon with a finite lifespan as set by management, and not perpetual growth. By the nature of the PPAs, individual projects have little organic growth with (at best) escalators for inflation, although rare. Inflation escalation is more common outside of the US with more volatile currencies.

### (2) Low Cost of Capital

Because their assets are contracted over a long period of time (twenty year is not uncommon) with creditworthy counterparties, YieldCos have a lower risk profile than the typical IPP, which translates into a lower cost of capital. In addition, by catering to a specific group of investors (i.e. those looking for stable, utility-like returns), YieldCos are able to attract capital more efficiently, which further exacerbates their cost of capital advantage. Finally, as YieldCos typically focus on renewables (NEP and TERP are pure-plays on renewable for instance), those vehicles are of unique interest to 'green' investors and sustainable funds. This improves YieldCos access to capital even further.

Focus is on stability in cash flow to payout bulk of cash flow

TERP target is ~85% of distributable cash flow

### (3) Flexible Business Model

As mentioned before, unlike MLPs, YieldCos are not restricted on the type of asset that they can own. In fact, any contracted energy asset with ten or more years left under its contract will do the trick. Contracted Solar plants or Wind plants without PTCs are a particularly good fit, but conventional plants or even transmission assets could work as well. Abengoa has pushed the envelope the furthest here but we anticipate others following as renewables growth slows.

### (4) Some Tax Advantages

To the extent that a YieldCo has NOLs (most do), it can avoid paying Federal taxes. For instance, NEP and NRG Yield do not expect to pay US Federal taxes for approximately 15 years. Of course, whether that advantage continues in the future depends on whether the assets dropped-down present the same tax attributes. In addition, thanks to the C-Corp structure, distributions are treated as dividends or capital gains for tax purposes, which are often taxed at a more favorable rate than income.

## Is It Too Good to Be True?

As seen above, there is a lot to like about YieldCos so it would be easy “yield” to the frenzy. Nonetheless, in general we prefer to remain cautious and have compiled some of the major concerns that we have regarding YieldCos. Despite our cautious stance, we see the upside profile from TerraForm Power as more than large enough to compensate for our concerns.

### (1) Growth?

Like any “growth” type of company, if the expected growth does not materialize, the stock price will most likely suffer. YieldCos have set expectations very high with that regard so even a minor mishap could have disastrous consequences.

In addition, inherent to the growth model is the dependence on capital markets. YieldCos need to be confident in their stock trading at adequate levels and/or in their ability to successfully raise debt on attractive terms. This is even more critical given the high ratio of financing-to-EV in capital raises.

Furthermore, as YieldCo structures become more widely spread and competition for high quality contracted assets becomes fiercer, M&A premia inflation becomes a sure concern.

Significant growth in distributable cash flow is predicated on acquiring assets from the sponsors, thus requiring the YieldCos to tap the capital markets.

### (2) Yield?

The value of most YieldCos has increased so much lately that the “yield” in their sobriquet has become somewhat undeserved. Indeed, as seen previously, most YieldCos currently trade at a 2-4% yield. To put this figure into perspective, the average regulated utility yields approximately 3.5%.

### (3) Interest Rates?

YieldCos are particularly exposed to a rising rate environment, similar to corporate debt in the same maturity profile. Furthermore, with YieldCos paying 80%-90% of their cash available for distribution out to investors, they depend almost entirely on capital markets for non-organic growth via drop-downs and third-party acquisitions. As we saw in 2008, the MLP sector (similarly exposed) was hit especially hard by inaccessibility to capital.

Increasing interest rates can remove the attractiveness of YieldCos as the relatively spread declines.

### (4) Corporate Governance?

Given the prevalent concerns around corporate governance across the MLP space, we believe corporate conduct is among the most significant risks to investors in YieldCos. Specifically, given the structures’ relative novelty, we believe maintaining credibility in fairly negotiating ROFO assets drop-downs will be crucial to sustain investor confidence. For example, NEP has two independent directors.

### (5) Heavy Reliance on Wind Generation

Many YieldCos are greatly dependent on wind power to generate electricity and, as mentioned earlier, this type of generation suffers from resource variability. Ultimately, this can notably damage the stability of the cash flow generation. We include historical capacity factor data in the following tables, including average, year-over-year changes, and relationship with temperatures for various fuel types:

## (6) Trading volatility

The underlying cash flows from the assets might offer certainty but shares can oscillate significantly given a lack of liquidity. For example, TERP appreciated over 40% within a four month period from October 2014 to February 2015. This volatility risk should decline as YieldCos grow in size and have more float but these vehicles will still remain smaller than most utilities.

Cash flows are stable but the stocks are not.

## (7) Incentive Distribution Rights (IDRs)

NEP and TERP offer explicit IDR fees to their sponsors which are designed to provide a clear financial reward for sponsors dropping assets into their YieldCos. The permits of IDRs have been debated before with MLPs but are still relatively new to the utilities universe. The most obvious downside of IDRs is that it requires the underlying YieldCo to grow significantly faster to maintain its common distribution per unit (DPU) growth as a portion of the cash flows is returned to the sponsor. As we saw with Kinder Morgan's reconsolidation, at some point the IDRs can become so prohibitive that the increased cost of capital limits the ability to win accretive deals.

## Charting New Waters: What are the Emerging Themes?

We think the near term bodes quite well for the sector amidst our expectations for continued consolidation of both existing portfolios – as well as even development platforms. We continue to prefer those with the currency to enable growth – and management teams that understand the need to have a visible long-term pipeline of growth; notably NYLD plays into this along with TERP after First Wind, but following NEP's structural update in October, we're constructive here too. As for the next wave of YieldCo listings, less visible growth will drive wider spreads vs. the mainstays, but we emphasize again – this contracted IPP sector is here to stay—it's really just the valuations that are up for debate. Below we present themes that we believe will be highlights for not just 2015 but years to come as the vehicles continue to evolve.

### (1) Theme #1: Having a hand in everything? Developing via all avenues possible

Among the most notable themes for the existing YieldCos is the recognition that they will increasingly migrate towards relying on all sources of potential organic project development, including utility-scale wind & solar as well as distributed/rooftop solar from which to source future drops in an increasingly competitive environment. Notably, we see SUNE's foray into wind through its recent First Wind acquisition as indicative of this trend – and wouldn't doubt if we saw other Solar YieldCo's follow their lead. With utility-scale solar projects set to become increasingly competitive, particularly beyond the 2016 ITC expiration, we see it as necessary for such YieldCo's to build out wind development platforms to remain relevant in large-scale category—or expand into DG to the extent they have scale to develop this business. Meanwhile, we continue to see an argument for the NRG's of the world to eventually enhance their existing wind prowess. Bottom line, we see a desire for not just acquiring operating assets, but a real value to having credible development businesses; that is why SUNE paid up for First Wind.

Expansion into non-pure power asset is inevitable, and some are already starting.

## **(2) Theme #2: Going Independent? Next wave poised to strike it on their own**

We believe the next wave of YieldCos will be unlikely to have any meaningful parent sponsors, opting instead to rely on independent agreements with developers to 'feed' their growth. This trend towards relying on independent developers for drop-downs brings into question the structural alignment of the parent entity – and the implicit and explicit benefits of parent ROFO agreements. We also think the focus on the quality of development pipelines will gain greater scrutiny as ROFOs agreements will increasingly be signed around assets that have yet to be constructed. To solve the alignment issue, we understand some are contemplating paying with equity in their YieldCo structures (rather than simply engaging in all-cash deals for ROFO acquisitions) in order to 'align' the parent interests. Among further interesting trends, the question of using multiple developers – to enable both regional and asset diversity – could also prove useful to mitigate concerns around lack of credible growth. Once more, we reiterate the next wave of YieldCo's are the second tiers – with the key question remaining in our minds whether to simply sell directly to the top-tier folks rather than bothering to list.

More 'developer agnostic' YieldCos are expected.

## **(3) Theme #3: Emerging Markets will become a reality. Breaking out capital market risk vs development risk**

Following SUNE's lead yet again, we see their second forthcoming spin of an emerging-markets focused YieldCo asset listed in the US could yet prove to be another significant trend for this sub-sector in 2015. We highlight the lower multiples with which all infrastructure assets in emerging markets – including renewables – lends itself towards a cost of capital arbitrage in the US to drive accretive growth. We highlight to investors that growth in geographies abroad will involve not just capital markets risk, but meaningful development and execution risk, with sanctity of development contracts and Memorandum of Understanding (MoU) commitments as worth close scrutinizing. Once more the question remains just *how* wide any EM YieldCo would trade – seeing F/X and broader regulatory risk around contracts, beyond conventional development risk. We flag even SUNE's YieldCo will largely be predicated around assets yet to be built.

The same question for US utilities will exist for YieldCo's – can the US listed companies trade at a full (or near full) multiple vs. domestic peers despite holding foreign assets?

### **YieldCo vs GrowthCo: EM can be the engine of growth to feed the beast**

The EM risks nonetheless do come along with a counterbalancing growth opportunity, once development risks can be negotiated. Positive power demand growth, higher conventional energy/fuel costs, as well as addressing energy security issues should lead to continued growth in coming years (and *without* the corresponding tax credit risk beyond 2016 that looms over the US focused developers/YieldCo structures). We still expect capital markets to trend into EM, we also expect companies to meet credibility thresholds through a proven track record of timely execution of development.

## **(4) Theme #4: How secure are ROFOs? It's *just* the right of a first offer.**

Among our chief concerns for the independent YieldCo's, particularly those without strong ties to support the subsidiaries (i.e. – no equity stakes or IDRs), is whether companies would opt to *walk* from ROFO, MOUs, or any other range of commitments made. As is implied in the ROFO acronym, it is just the right of a first offer – it doesn't necessarily mean that the offers are the most competitive. Over time, our bias remains that quality YieldCo's will eventually buy up the lower quality subsidiaries in search of growth – but this could yet manifest itself through

Will independent YieldCos have sufficiently committed parents to see the ROFOs to fruition?

the taking of assets away from ROFOs where the parents and sponsors have little holding them together aside gentleman's agreements. This implicit risk should emphasize the underlying (primary) capital market risk in following through on Yieldco drop-down related stories.

#### **(5) Theme #5: Could tax advantaged structures come to the fore?**

While up until now YieldCo's have enjoyed an advantaged tax status primarily from the tax basis step-up involved in their acquisitions alongside the intrinsic tax credits/shield generated from the assets themselves (ITC/PTC and accelerated MACRS depreciation), the question remains whether the IRS clarification on REIT eligibility from last spring will have come to pass. Many investors have expressed some degree of skepticism on the viability for the traditional C-Corps to remain competitive with the IDR payments back to their sponsors eventually, the introduction of a REIT advantage could drive a more structural argument around 'why' assets should continue to migrate into the YieldCo structure, through the interest rate cycle, seeing the tax attribute upside.

Can a YieldCo be a REIT?

#### **(6) Theme #6: Is there an MLP diversification theme at play here too?**

Following on recent months of MLP volatility, we note greater willingness among some constituents to evaluate investments in contracted renewable assets held within the YieldCo sector. Seeing the entire sub-sector's market cap as miniscule relative to MLPs, outflows from commodity-sensitive names could well provide a bid for the small, relatively illiquid YieldCo 'niche'.

#### **(7) Theme #7: Leverage – what is the right financing approach?**

Having focused on valuing assets off yield, the bias appears to increasingly push to finance with non-amortizing debt both at the project and corporate level to enable higher near-term cash yields. The question remains whether conventional bullet maturity notes will align with less overall leverage – or simply stretch companies all the more at the end of their contract lives.

### **Expanding the definition of a YieldCo asset: what can qualify?**

Beyond geographical expansion, eventually we the pipeline of eligible assets will grow by including non-renewable assets as well. This could start with long term contractible businesses but which could include lower quality hedges (more volatility than conventional PPAs where volumetric risk is assumed by the buyer) these include sectors such as power transmission and water assets to begin with. Eventually, the YieldCo definition will likely expand broadly to feature 'infrastructure' assets more widely.

Expanding to include transmission and water does not look like much of a stretch.

#### **Defined asset lives within a YieldCo? Losing the residual value tail**

We think the other angle here will be players trying to push the limits, and questioning the palatability of including high yield bonds in a portfolio to strengthen yield characteristics of their vehicles. *Broader question is whether drops of assets/structures with specific lives (either via bonds or NRG's 18-year flip on its DG drops) will be palatable to YieldCo investors – or will they demand security of retaining the residual value of assets?*

A further trend in pushing the limits of a YieldCo points to fixed-live asset drop-downs – without the residual value of any contract reset

Even staying with renewables, questions about fundamental asset quality have largely been ignored with solar and wind investments viewed as somewhat fungible as long as the PPA was signed at a similar time in a similar market. A focus on turbine/panel quality, PPA details, and other nuances could emerge as more developers bring assets to the table.

Not all MWs are created equal.

**Many bulls argue residual value is key to long-term YieldCo upside** – We think a greater focus on what an eventual drop to 'market' for many assets bears close scrutiny. We see DG assets, which exist behind the meter, and newer wind assets as presenting the least risk, while legacy (particularly 2009/2010 solar assets and California gas assets) appear to have the most downside risk on contract expiration. We see repowering opportunities of both utility-scale solar and wind as opening an entire avenue of long-term growth that has received relatively little attention in the YieldCo debate.

### **At the end of the day... the sector remains one of consolidation.**

While new YieldCo's may continue to grab attention in coming months, we see the most relevant news as still coming back to the outlook for consolidation and improving 'growth' metrics for the *existing* entities. While the question of the 'ideal' dividend growth target is hotly debated, there's no doubt that exceeding these targets in the near term (via one-time deals) is an attractive proposition to both the YieldCo entity and their sponsors, who are able to accelerate the realization of the underlying IDRs.

What's the next deal we're tracking? We think the sale of Atlantic Power's crown jewel wind portfolio could be the clearest 'big datapoint' in the sector, providing a potential transaction worth ~\$500 Mn in EV, as the former 'YieldCo' trades over the assets to a company that is still in good standing.

We think the bias towards consolidation rather than incremental public listings plays into TERP's hands. Given the widening yield between the 'haves' and the 'have-nots' (particularly those seeking to go public), we see a clear argument to sell-out rather than *bother* with an IPO process.

## Who Are the Players in the Renewable Space?

As mentioned, renewables are particularly adapted to YieldCos. We include below the top-25 owners of wind and solar capacity in the US/Canada:

**Figure 58: Top-25 Owners of Operating Wind Capacity in US/Canada as of 2014**

	Ultimate Parent	Number of Assets	Total Owned Operating Capacity (MW)	Total Owned Planned Capacity (MW)	YieldCo Yet?
1	NextEra Energy, Inc.	121	10,611	2,532	YES
2	Iberdrola, S.A.	73	5,779	4,996	Considering
3	EDP - Energias de Portugal SA	56	4,029	4,666	Considering
4	China Three Gorges Corporation	49	3,924	3,984	
5	EDP Renováveis	48	3,919	3,984	Considering
6	HidroCantábrico Energia S.A.	48	3,919	3,984	
7	PARPÚBLICA - Participações Públicas	48	3,919	3,984	
8	Berkshire Hathaway Inc.	31	3,747	1,148	
9	Invenergy LLC	44	2,996	3,295	
10	EDF Group	50	2,767	3,262	Considering
11	BP plc	21	2,743	1,861	
12	E.ON SE	27	2,725	2,700	
13	NRG Energy, Inc.	46	2,314	285	YES
14	Pattern Energy Group LP	16	2,310	1,262	YES
15	Riverstone Holdings LLC	19	2,310	1,611	IPP Spin
16	General Electric Company	13	2,094	456	
17	Duke Energy Corporation	22	2,078	497	
18	Enbridge Inc.	20	1,989	110	
19	Enel S.p.A.	45	1,764	3,710	
20	Infigen Energy Limited	18	1,554	-	
21	Sempra Energy	7	1,488	475	
22	TransAlta Corporation	19	1,468	-	YES
23	Pattern Energy Group Inc.	9	1,426	249	YES
24	Exelon Corporation	82	1,329	120	
25	Global Infrastructure Management	23	1,297	683	

Source: SNL data

The larger question remains to what extent the YieldCo phenomenon will enable consolidation, particularly of smaller developers. In particular, 'mature' portfolios without meaningful development opportunities would be disproportionately biased to 'monetize' to a YieldCo.

**Figure 59: Top-25 Owners of Operating Solar Capacity in US/Canada as of 2014**

	Ultimate Parent	Number of Assets	Total Owned Operating Capacity (MW)	Total Owned Planned Capacity (MW)	YieldCo Yet?
1	NRG Energy, Inc.	26	1,677	22	YES
2	NextEra Energy, Inc.	27	1,094	2,402	YES
3	Berkshire Hathaway Inc.	12	844	847	
4	SunEdison, Inc.	235	576	1,424	YES
5	Consolidated Edison, Inc.	29	460	879	
6	Sempra Energy	11	439	1,178	
7	Google Inc.	4	394	-	
8	BrightSource Energy	8	392	2,990	
9	General Electric Company	10	390	167	
10	Sumitomo Corporation	2	383	167	
11	Exelon Corporation	35	324	130	
12	Southern Company	11	293	90	
13	Turner Enterprises, Inc.	7	292	-	
14	LS Power Group	4	280	151	
15	EDF Group	21	265	363	
16	Abengoa, S. A.	2	250	280	YES
17	Enbridge Inc.	7	250	-	
18	Strata Solar LLC	138	240	808	
19	8minutenergy Renewables, LLC	17	206	1,595	
20	Riverstone Holdings LLC	2	206	550	IPP Spin
21	Fortress Investment Group LLC	5	180	-	
22	ArcLight Capital Holdings, LLC	2	176	-	
23	Global Infrastructure Management, LLC	2	176	-	
24	Duke Energy Corporation	38	159	507	
25	PG&E Corporation	11	153	-	

Source: SNL data

Lastly in addition to renewables, we could see transmission assets being dropped-down into YieldCo structures. Given the smaller base of existing assets, we suspect the preponderance of YieldCo growth will remain driven by wind assets rather than solar. Abengoa Yield has been a leader here whereas TerraForm Power has stated it intends to remain a 'pure' renewable business with only Solar and Wind assets.



## YieldCos are a global phenomenon

We tend to focus on the YieldCos in the US in our analysis but there are vehicles with contracted renewables abroad as well. As shown by dividend yield, many of the foreign YieldCos offer lower growth and trade at current yields in excess of five percent, a contrast to US YieldCos at ~3% or lower.

**Figure 60: Full YieldCo Universe**

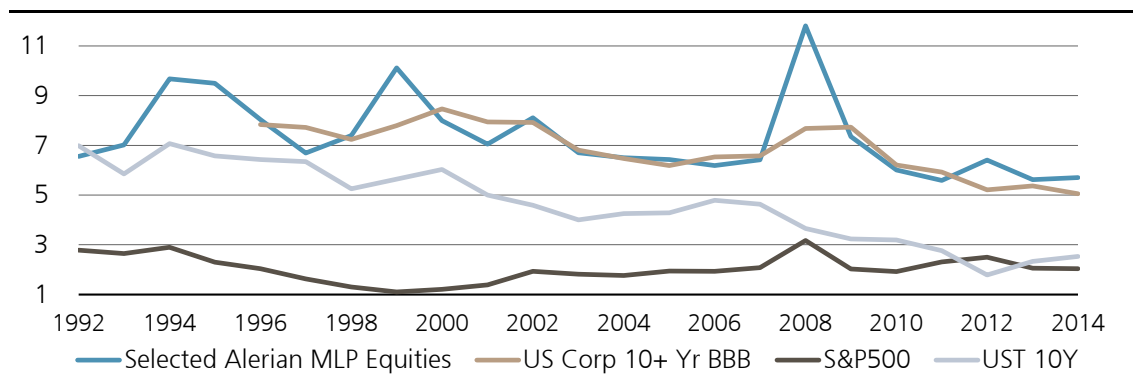
Ticker	Company name	Market Cap \$M	Price \$	Dividend Yield (%)				EV/EBITDA			
				2014	2015	2016	2017	2014	2015	2016	2017
NEP	NextEra Energy Partners LP	766	41.0	1.1%	2.5%	3.0%	3.3%	22.6x	17.3x	13.3x	11.1x
NYLD	NRG Yield, Inc. Class A	4,186	54.1	2.6%	3.2%	3.8%	4.6%	18.6x	13.1x	11.6x	10.8x
ABY	Abengoa Yield PLC	2,798	33.4	1.8%	4.9%	6.4%	9.2%	12.8x	12.8x	11.2x	NA
AQN-CA	Algonquin Power & Utilities Corp.	1,921	8.1	3.9%	4.0%	4.2%	NA	13.3x	12.6x	11.0x	NA
PEGI	Pattern Energy Group, Inc. Class A	1,957	28.3	4.6%	5.2%	5.9%	6.5%	17.0x	12.1x	10.2x	NA
INE-CA	Innervex Renewable Energy Inc.	976	9.7	5.3%	5.0%	5.1%	4.9%	16.3x	17.0x	16.9x	11.9x
BEP.UT-CA	Brookfield Renewable Energy Partners LP	8,649	31.4	5.3%	5.6%	6.0%	6.2%	13.1x	11.4x	10.9x	11.2x
CPX-CA	Capital Power Corporation	1,588	19.1	5.9%	5.8%	6.1%	NA	7.4x	7.4x	7.0x	NA
UKW-GB	Greencoat UK Wind Plc	740	1.6	6.0%	6.0%	6.2%	6.3%	NA	NA	NA	NA
TRIG-GB	Renewables Infrastructure Group Limited GBP Red.Shs	652	1.6	6.0%	NA	NA	NA	NA	NA	NA	NA
RNW-CA	TransAlta Renewables, Inc.	1,176	10.3	6.5%	6.0%	6.0%	6.4%	11.4x	10.7x	9.8x	10.7x
CSE-CA	Capstone Infrastructure Corporation	242	2.5	10.3%	9.5%	9.5%	9.5%	8.7x	12.3x	12.0x	9.7x
SAY-ES	Saeta Yield SA	926	11.4	0.0%	NA	NA	NA	NA	NA	NA	NA
Average		2,045	19.4	4.6%	5.2%	5.7%	6.3%	14.1x	12.7x	11.4x	10.9x
Median		1,176	11.4	5.3%	5.2%	6.0%	6.3%	13.2x	12.5x	11.1x	10.9x
TERP	TerraForm Power, Inc. Class A	4,231	34.0	3.2%	3.8%	4.6%	5.5%	NA	16.9x	12.6x	10.7x

Source: FactSet

## Where Have MLPs and YieldCos Traded?

Rightfully so or not, investors and management often compare YieldCos and MLPs, so we thought we would give an overview of how asset class performed. We focused on the ten equities with the largest weighting in the Alerian MLP Index (representing the majority of the market cap), an index focused on MLPs with an emphasis on growing distributions. The other instrument examined was an index of US Corporate 10+ year BBB-rated corporate debt. Additionally, to provide context we included the yields of the S&P 500 and the ten-year US Treasury note, although both were notably lower. We note that, due to investment mandate restrictions, not all investors can hold MLPs, which is not the case with YieldCo's.

**Figure 61: Monthly Historical Yields: MLP/Bond spread largely still holds**



Source: FactSet

**Figure 62: Historical Yields**

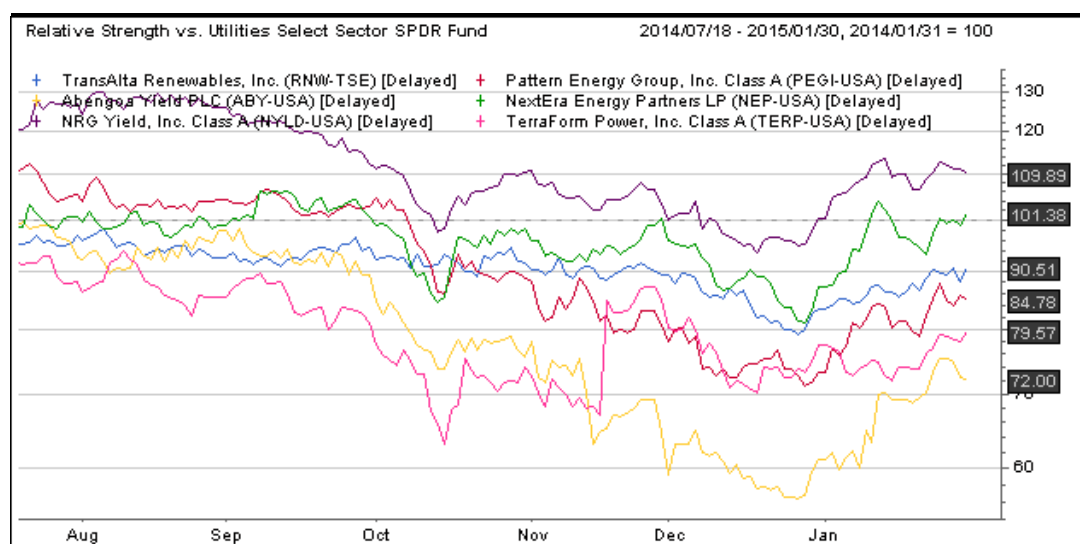
Yield %	'99-'14	'99-'05	'05-'10	'10-'14	'14
Alerian	7.1	7.6	7.4	5.9	5.7
BBB	6.7	7.4	6.8	5.6	5.1
Spread	0.4	0.2	0.5	0.3	0.7

Source: FactSet

Since the early 2000s, the yields on MLPs have generally been in-line with the yields on US Corp BBB rated debt. Although the yields on Alerian and BBB have been close, the spread had been narrowing notably over the years prior to 2014. For example, from 1999-2014 the Alerian yield was 40bps higher. Upon closer examination, the bulk of that excess was caused by the artificially inflated yields during the financial crisis in 2008. In 2017 the yield on MLPs declined but corporate interest rates fell more sharply.

We also include a chart of recent YieldCo stock performance:

**Figure 63: How have YieldCos traded since the Summer? Most have lagged the XLU**



Source: FactSet

## Executive Officers and Directors Biographies

We present the biographies as presented in the December 2014 S-1 (as of November 30<sup>th</sup>). Aside from the CFO and the Corporate Governance & Conflicts Committee, all executives have linkages with SunEdison.

**Figure 64: Names, Ages, and Titles of TerraForm Executive Officers**

Name	Age	Position	Committees
Carlos Domenech Zornoza	44	Director, President, and CEO	
Francisco "Pancho" Perez Gundin	43	Director, Executive VP, and COO	
Alejandro "Alex" Hernandez	37	Executive VP and CFO	
Kevin Lapidus	44	Senior VP, Corporate Development and M&A	
Sebastian Deschler	43	Senior VP, General Counsel and Secretary	
Ahmad Chatila	47	Director and Chairman	
Brian Wuebbels	42	Director	
Steven Tesoriere	36	Director	Audit
Martin Truong	37	Director	
Mark Lerdal	55	Director	Audit & Conflicts
Mark Florian	56	Director	Conflicts
Hanif "Wally" Dahya	58	Director	Audit & Conflicts

Source: Company Filings

### **Carlos Domenech Zornoza, Director, President and Chief Executive Officer**

Carlos Domenech Zornoza serves as TerraForm Power's President and Chief Executive Officer. Previously, Mr. Domenech served as the Executive Vice President & President of **SunEdison** Capital from March 2013 to January 2014. After the acquisition of SunEdison by MEMC Electronic Materials, Inc. in November 2009, Mr. Domenech served as the Executive Vice President & President of SunEdison. Before that, Mr. Domenech served as the Chief Financial Officer of SunEdison beginning in September 2007 until he became its Chief Operating Officer in November 2008. Prior to joining SunEdison, Mr. Domenech spent 14 years with General Electric, where he served in a variety of leadership roles, including serving as the Chief Financial Officer of Universal Pictures International Entertainment, then a division of General Electric.

### **Francisco "Pancho" Perez Gundin, Director, Executive Vice President and Chief Operating Officer**

Pancho Perez Gundin serves as TerraForm Power's Chief Operating Officer. Previously, Mr. Perez Gundin served as the President of **SunEdison** Europe, EMEA and Latin America from June 2009 to January 2014. Mr. Perez Gundin began with SunEdison in operations in November 2008. Prior to joining SunEdison, Mr. Perez Gundin spent 14 years with Universal Pictures International Entertainment, where he served in a variety of financial roles, including most recently serving as Financial Director for that company.

### **Alejandro "Alex" Hernandez, Executive Vice President and Chief Financial Officer**

Alex Hernandez was appointed as TerraForm Power's Chief Financial Officer in September 2014. Prior to joining TERP, Mr. Hernandez spent nine years with Goldman, Sachs & Co., where he served as a Managing Director in the Investment Banking Division. In that role, Mr. Hernandez was responsible for primary coverage

of North American energy companies in the power, utility, and renewable energy sectors, and provided strategic and capital markets advice to management teams and Boards of Directors.

#### **Kevin Lapidus, Senior Vice President, Corporate Development and M&A**

Kevin Lapidus serves as TerraForm Power's Senior Vice President, Corporate Development and M&A. Mr. Lapidus also serves as the Senior Vice President, Corporate Development and M&A for **SunEdison**, a position he has held since January 2013. In that role, Mr. Lapidus manages SunEdison's Global Corporate Development group and is responsible for company and project acquisitions, joint ventures and partnerships, and other capital raising and strategy initiatives. Previously, Mr. Lapidus served as SunEdison's General Counsel from February 2007 until joining the Global Corporate Development group. Mr. Lapidus previously also managed SunEdison's Government Affairs group. Prior to that, Mr. Lapidus served as the Senior Vice President and General Counsel of two other technology companies, and for six years served on the board of directors of the Washington Metropolitan Area Corporate Counsel Association (WMACCA), including serving as its president for one year. Mr. Lapidus was also an attorney at both Hale and Dorr LLP and Hogan & Hartson L.L.P.

#### **Sebastian Deschler, Senior Vice President, General Counsel and Secretary**

Sebastian Deschler serves as TerraForm Power's Senior Vice President, General Counsel and Secretary. Previously, Mr. Deschler served as **SunEdison's** Vice President and Head of Legal, EMEA and Latin America, from July 2010 to January 2014. Mr. Deschler previously served as Director, International Legal and Head of Legal, Europe, of SunEdison from December 2007 to June 2010. Prior to joining SunEdison, Mr. Deschler was an attorney at Milbank, Tweed, Hadley & McCloy LLP and Orrick, Herrington & Sutcliffe LLP in Washington, D.C., handling project finance, regulatory and corporate matters.

#### **Ahmad Chatila, Director and Chairman**

Ahmad Chatila serves as Chairman of TerraForm Power's board of directors and as a director. Mr. Chatila serves as the President, Chief Executive Officer and as a member of the board of directors for **SunEdison**, positions he has held since March 2009. Prior to SunEdison, Mr. Chatila served as Executive Vice President of the Memory and Imaging Division, and head of global manufacturing for Cypress Semiconductor. Previously, Mr. Chatila served as managing director of Cypress' Low Power Memory Business Unit. Prior to these roles at Cypress, Mr. Chatila served in sales at Taiwan Semiconductor Manufacturing Co.

#### **Brian Wuebbels, Director**

Brian Wuebbels is a member of TerraForm Power's board of directors. Mr. Wuebbels serves as the Executive Vice President and Chief Financial Officer of **SunEdison**, positions he has held since May 2012. Mr. Wuebbels has been with SunEdison/MEMC Electronic Materials, Inc. since 2007 and previously held various positions, including Vice President and General Manager—Balance of System Products, Vice President, Solar Wafer Manufacturing, Vice President of Financial Planning and Analysis and Vice President Operations Finance. Before joining MEMC, Mr. Wuebbels served as Vice President and Chief Financial Officer of Honeywell's Sensing and Controls Business. Prior to that, Mr. Wuebbels spent 10 years at General Electric in various senior finance and operations roles in multiple businesses around the world.

### **Steven Tesoriere, Director**

Steven Tesoriere is a member of TerraForm Power's board of directors. Mr. Tesoriere is a Managing Principal and Portfolio Manager of Altai Capital Management, L.P. Prior to founding Altai Capital in 2009, Mr. Tesoriere was an analyst at Anchorage Capital Group, L.L.C. from 2003 to 2009, and prior to that, he was an Associate at Goldman, Sachs & Co. and an Analyst at The Blackstone Group, L.P. Mr. Tesoriere is a member of the board of directors of **SunEdison**.

### **Martin Truong, Director**

Martin Truong was appointed to TerraForm Power's board of directors in connection with the completion of the IPO. Mr. Truong has served as **SunEdison's** Vice President, General Counsel and Secretary since April of 2013 and was promoted to Senior Vice President in May of 2014. Mr. Truong joined SunEdison in February 2008 and has held various roles of increasing responsibility, most recently serving as SunEdison's Assistant General Counsel with legal responsibilities for Emerging Markets, Solar Materials and intellectual property licensing and monetization.

### **Mark Lerdal, Director**

Mark Lerdal was appointed to TerraForm Power's board of directors in connection with the completion of the IPO. Mr. Lerdal has served as the Executive Chairman of Leaf Clean Energy, a closed end fund focused on renewable energy investments since April 1, 2014. He has also been a Managing Director of MP2 Capital, LLC, a developer, owner and operator of solar generation assets since 2009. From September of 2011 to February of 2013 Mr. Lerdal served as President of Hydrogen Energy California, a developer of a carbon capture and sequestration facility. Prior to that time Mr. Lerdal was a Managing Director at KKR Finance in its debt securities division. He has been active in the renewable energy business for 30 years as an investor, operating executive and attorney. Mr. Lerdal also serves as a non-executive board member at Trading Emissions and Onsite Energy Corporation.

**Lerdal, Florian, and Dahya are independent directors on the Corporate Governance and Conflicts Committee.**

### **Mark Florian, Director**

Mark Florian was appointed to TerraForm Power's board of directors in connection with the completion of the IPO. Mr. Florian has served as a Managing Director and the Head of Infrastructure Funds at First Reserve, a premier global energy-focused investment firm, since 2008. The energy infrastructure investment business of First Reserve currently has over \$4 billion of assets under management. Prior to joining First Reserve, Mr. Florian had a 23-year career at Goldman Sachs, where he served in several senior roles, including Chief Operating Officer of Goldman Sachs' Public Sector and Infrastructure Department. During his time at Goldman Sachs, Mr. Florian's work spanned various areas of the firm, including the corporate investment banking, mergers & acquisitions and public finance areas.

### **Hanif "Wally" Dahya, Director**

Hanif "Wally" Dahya was appointed to TerraForm Power's board of directors in connection with the completion of the IPO. Mr. Dahya has served as the Chief Executive Officer of the Y Company LLC, a private investment firm that specializes in restructuring distressed assets in the emerging markets, focusing on Telecommunications, Energy, and Environmental Industries since 2007. Before founding the Y Company LLC, Mr. Dahya was a Partner at Sandler O'Neill & Partners LP, a full service investment banking firm specializing in serving financing

institutions, from 1991 to 1997. Prior to that, Mr. Dahya worked at EF Hutton & Company, Inc. in the Corporate Finance group, served as a Managing Director at LF Rothschild & Company, Inc., and was a Managing Director at UBS Securities Inc. Mr. Dahya is currently a member of the Board of Directors of New York Community Bancorp, Inc., for which he chairs the Investment Committee and the New York Commercial Bank Credit Committee and is a member of the Audit Committee, Nominating and Corporate Governance Committee, Risk Assessment Committee, Capital Adequacy Committee and the Asset Liability Committee.

## TerraForm Power, Inc. (TERP.O)

Income statement (US\$m)	12/12	12/13	12/14	12/15E	% ch	12/16E	% ch	12/17E	12/18E	12/19E
<b>Revenues</b>	<b>16</b>	<b>17</b>	<b>126</b>	<b>486</b>	<b>286.2</b>	<b>687</b>	<b>41.4</b>	<b>882</b>	<b>1,476</b>	<b>1,935</b>
Gross profit	14	16	107	404	275.7	577	42.9	727	1,209	1,559
<b>EBITDA (UBS)</b>	<b>10</b>	<b>10</b>	<b>48</b>	<b>364</b>	<b>NM</b>	<b>537</b>	<b>47.6</b>	<b>687</b>	<b>1,169</b>	<b>1,519</b>
Depreciation & amortization	(4)	(5)	(41)	(175)	331.5	(237)	35.3	(290)	(463)	(589)
<b>EBIT (UBS)</b>	<b>5</b>	<b>5</b>	<b>7</b>	<b>189</b>	<b>NM</b>	<b>300</b>	<b>59.0</b>	<b>397</b>	<b>706</b>	<b>930</b>
Associates & investment income	0	0	0	0	-	0	-	0	0	0
Other non-operating income	0	1	(7)	0	-	0	-	0	0	0
Net interest	(6)	(6)	(84)	(120)	-41.8	(193)	-61.5	(241)	(415)	(535)
Exceptionals (incl goodwill)	0	0	0	0	-	0	-	0	0	0
<b>Profit before tax</b>	<b>0</b>	<b>0</b>	<b>(84)</b>	<b>69</b>	<b>-</b>	<b>107</b>	<b>54.6</b>	<b>156</b>	<b>290</b>	<b>396</b>
Tax	1	0	8	(28)	-	0	-	0	0	0
<b>Profit after tax</b>	<b>1</b>	<b>0</b>	<b>(76)</b>	<b>41</b>	<b>-</b>	<b>107</b>	<b>157.7</b>	<b>156</b>	<b>290</b>	<b>396</b>
Preference dividends	0	0	0	0	-	0	-	0	0	0
Minorities	0	0	3	(27)	-	(27)	0.0	(27)	(27)	(27)
Extraordinary items	0	0	0	0	-	0	-	0	0	0
<b>Net earnings (local GAAP)</b>	<b>1</b>	<b>0</b>	<b>(73)</b>	<b>14</b>	<b>-</b>	<b>79</b>	<b>NM</b>	<b>129</b>	<b>263</b>	<b>368</b>
<b>Net earnings (UBS)</b>	<b>1</b>	<b>0</b>	<b>(73)</b>	<b>14</b>	<b>-</b>	<b>79</b>	<b>NM</b>	<b>129</b>	<b>263</b>	<b>368</b>
Tax rate (%)	0.0	0.0	0.0	40.0	-	0.0	-	0.0	0.0	0.0
<b>Per share (US\$)</b>	<b>12/12</b>	<b>12/13</b>	<b>12/14</b>	<b>12/15E</b>	<b>% ch</b>	<b>12/16E</b>	<b>% ch</b>	<b>12/17E</b>	<b>12/18E</b>	<b>12/19E</b>
EPS (UBS, diluted)	0.03	(0.01)	(1.44)	0.23	-	1.05	352.0	0.76	1.14	1.34
EPS (local GAAP, diluted)	0.03	(0.01)	(1.44)	0.23	-	1.05	352.0	0.76	1.14	1.34
EPS (UBS, basic)	0.03	(0.01)	(2.37)	0.23	-	1.05	352.0	0.76	1.14	1.34
Net DPS (US\$)	0.00	0.00	0.27	1.30	381.5	1.53	17.7	1.90	2.28	2.61
Cash EPS (UBS, diluted)*	0.19	0.17	(0.64)	3.15	-	4.18	32.8	2.46	3.15	3.48
Book value per share	1.08	0.56	10.23	11.11	8.6	12.65	13.9	6.41	8.47	8.16
Average shares (diluted)	27.72	27.72	50.40	59.93	18.9	75.51	26.0	170.26	230.28	275.12
<b>Balance sheet (US\$m)</b>	<b>12/12</b>	<b>12/13</b>	<b>12/14</b>	<b>12/15E</b>	<b>% ch</b>	<b>12/16E</b>	<b>% ch</b>	<b>12/17E</b>	<b>12/18E</b>	<b>12/19E</b>
Cash and equivalents	0	1	468	447	-4.6	451	0.9	404	383	183
Other current assets	9	105	147	281	90.5	349	24.3	416	617	774
<b>Total current assets</b>	<b>9</b>	<b>106</b>	<b>616</b>	<b>728</b>	<b>18.2</b>	<b>800</b>	<b>9.9</b>	<b>820</b>	<b>1,000</b>	<b>957</b>
Net tangible fixed assets	112	407	2,308	3,920	69.9	5,240	33.7	6,306	10,178	12,740
Net intangible fixed assets	23	23	360	360	0.0	360	0.0	360	360	360
Investments / other assets	16	31	105	105	0.0	105	0.0	105	105	105
<b>Total assets</b>	<b>159</b>	<b>567</b>	<b>3,389</b>	<b>5,113</b>	<b>50.9</b>	<b>6,506</b>	<b>27.2</b>	<b>7,592</b>	<b>11,643</b>	<b>14,162</b>
Trade payables & other ST liabilities	7	91	116	246	111.4	347	40.9	444	741	971
Short term debt	3	37	73	111	52.74	124	11.75	217	292	375
<b>Total current liabilities</b>	<b>10</b>	<b>129</b>	<b>189</b>	<b>357</b>	<b>88.8</b>	<b>471</b>	<b>31.8</b>	<b>661</b>	<b>1,033</b>	<b>1,346</b>
Long term debt	103	400	1,525	2,659	74.4	3,622	36.2	4,354	7,097	8,932
Other long term liabilities	16	23	154	196	27.2	196	0.0	196	246	296
Preferred shares	0	0	0	0	-	0	-	0	0	0
<b>Total liabilities (incl pref shares)</b>	<b>129</b>	<b>551</b>	<b>1,869</b>	<b>3,213</b>	<b>71.9</b>	<b>4,289</b>	<b>33.5</b>	<b>5,211</b>	<b>8,377</b>	<b>10,574</b>
Common s/h equity	30	15	314	666	112.4	955	43.5	1,092	1,950	2,244
Minority interests	0	0	1,206	1,234	2.3	1,261	2.2	1,289	1,316	1,344
<b>Total liabilities &amp; equity</b>	<b>159</b>	<b>567</b>	<b>3,389</b>	<b>5,113</b>	<b>50.9</b>	<b>6,506</b>	<b>27.2</b>	<b>7,592</b>	<b>11,643</b>	<b>14,162</b>
<b>Cash flow (US\$m)</b>	<b>12/12</b>	<b>12/13</b>	<b>12/14</b>	<b>12/15E</b>	<b>% ch</b>	<b>12/16E</b>	<b>% ch</b>	<b>12/17E</b>	<b>12/18E</b>	<b>12/19E</b>
Net income (before pref divs)	1	0	(73)	14	-	79	NM	129	263	368
Depreciation & amortization	4	5	41	175	331.5	237	35.3	290	463	589
Net change in working capital	0	0	121	(4)	-	32	-	31	95	74
Other operating	(1)	0	0	45	-	0	-	0	50	50
<b>Operating cash flow</b>	<b>4</b>	<b>4</b>	<b>89</b>	<b>230</b>	<b>159.2</b>	<b>348</b>	<b>51.4</b>	<b>450</b>	<b>871</b>	<b>1,080</b>
Tangible capital expenditure	0	(264)	(1,474)	(1,787)	-21.2	(1,557)	12.8	(1,356)	(4,335)	(3,151)
Intangible capital expenditure	0	0	0	0	-	0	-	0	0	0
Net (acquisitions) / disposals	0	0	0	0	-	0	-	0	0	0
Other investing	0	0	0	0	-	0	-	0	0	0
<b>Investing cash flow</b>	<b>0</b>	<b>(264)</b>	<b>(1,474)</b>	<b>(1,787)</b>	<b>-21.2</b>	<b>(1,557)</b>	<b>12.8</b>	<b>(1,356)</b>	<b>(4,335)</b>	<b>(3,151)</b>
Equity dividends paid	0	0	(30)	(198)	NM	(257)	-30.1	(399)	(705)	(1,019)
Share issues / (buybacks)	0	0	697	536	-23.1	467	-12.8	407	1,300	945
Other financing	0	0	0	0	-	0	-	0	0	0
Change in debt & pref shares	(1)	302	1,190	1,173	-1.46	976	-16.80	824	2,819	1,918
<b>Financing cash flow</b>	<b>(1)</b>	<b>302</b>	<b>1,856</b>	<b>1,511</b>	<b>-18.6</b>	<b>1,186</b>	<b>-21.5</b>	<b>832</b>	<b>3,414</b>	<b>1,844</b>
<b>Cash flow inc/(dec) in cash</b>	<b>3</b>	<b>42</b>	<b>471</b>	<b>(46)</b>	<b>-</b>	<b>(23)</b>	<b>48.8</b>	<b>(74)</b>	<b>(49)</b>	<b>(227)</b>
FX / non cash items	-	(41)	(4)	25	-	28	12.2	28	28	28
<b>Balance sheet inc/(dec) in cash</b>	<b>-</b>	<b>1</b>	<b>467</b>	<b>(21)</b>	<b>-</b>	<b>4</b>	<b>-</b>	<b>(47)</b>	<b>(22)</b>	<b>(199)</b>

Source: Company accounts, UBS estimates. (UBS) metrics use reported figures which have been adjusted by UBS analysts.\*Cash EPS (UBS, diluted) is calculated using UBS net income adding back depreciation and amortization.

## TerraForm Power, Inc. (TERP.O)

Valuation (x)	12/12	12/13	12/14	12/15E	12/16E	12/17E	12/18E	12/19E
P/E (local GAAP, diluted)	-	-	-	NM	33.1	46.0	30.4	26.0
P/E (UBS, diluted)	-	-	-	NM	33.1	46.0	30.4	26.0
P/CEPS	-	-	-	11.0	8.3	14.1	11.0	10.0
Equity FCF (UBS) yield %	-	-	-	(82.7)	(64.2)	(48.1)	(183.9)	(110.0)
Net dividend yield (%)	-	-	-	3.7	4.4	5.5	6.6	7.5
P/BV x	-	-	-	3.1	2.7	5.4	4.1	4.3
EV/revenues (core)	-	-	-	10.0	8.7	7.8	6.0	4.6
EV/EBITDA (core)	-	-	-	13.3	11.1	10.0	7.5	5.8
EV/EBIT (core)	-	-	-	25.7	19.8	17.4	12.4	9.5
EV/OpFCF (core)	-	-	-	26.3	15.7	12.5	12.0	7.3
EV/op. invested capital	-	-	-	1.4	1.2	1.1	1.0	0.8
<b>Enterprise value (US\$m)</b>	<b>12/12</b>	<b>12/13</b>	<b>12/14</b>	<b>12/15E</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>12/19E</b>
Market cap.	-	-	-	1,883	1,883	1,883	1,883	1,883
Net debt (cash)	-	271	783	1,727	2,809	3,731	5,586	5,586
Buy out of minorities	0	0	1,206	1,234	1,261	1,289	1,316	1,344
Pension provisions/other	0	0	0	0	0	0	0	0
<b>Total enterprise value</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>4,844</b>	<b>5,954</b>	<b>6,902</b>	<b>8,786</b>	<b>8,813</b>
Non core assets	(2)	(20)	0	0	0	0	0	0
<b>Core enterprise value</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>4,844</b>	<b>5,954</b>	<b>6,902</b>	<b>8,786</b>	<b>8,813</b>
<b>Growth (%)</b>	<b>12/12</b>	<b>12/13</b>	<b>12/14</b>	<b>12/15E</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>12/19E</b>
Revenue	-	11.3	NM	NM	41.4	28.4	67.3	31.1
EBITDA (UBS)	-	5.3	NM	NM	47.6	28.1	70.1	30.0
EBIT (UBS)	-	-3.4	40.1	NM	59.0	32.3	77.8	31.8
EPS (UBS, diluted)	-	-	NM	-	NM	-28.0	51.1	17.2
Net DPS	-	-	-	NM	17.7	24.2	20.0	14.5
<b>Margins &amp; Profitability (%)</b>	<b>12/12</b>	<b>12/13</b>	<b>12/14</b>	<b>12/15E</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>12/19E</b>
Gross profit margin	NM	NM	NM	NM	NM	NM	NM	NM
EBITDA margin	61.0	57.7	37.9	74.8	NM	NM	NM	NM
EBIT margin	33.8	29.3	5.7	38.8	43.7	45.0	47.8	48.1
Net earnings (UBS) margin	5.6	NM	NM	2.9	11.5	14.6	17.8	19.0
ROIC (EBIT)	-	1.8	0.5	5.5	6.2	6.6	8.4	8.1
ROIC post tax	-	1.8	0.5	3.3	6.2	6.6	8.4	8.1
ROE (UBS)	-	(1.2)	(44.1)	2.8	9.8	12.6	17.3	17.5
<b>Capital structure &amp; Coverage (x)</b>	<b>12/12</b>	<b>12/13</b>	<b>12/14</b>	<b>12/15E</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>12/19E</b>
Net debt / EBITDA	11.1	43.2	23.7	6.4	6.1	6.1	6.0	6.0
Net debt / total equity %	NM	NM	74.3	122.3	148.7	175.0	214.5	254.3
Net debt / (net debt + total equity) %	78.0	96.6	42.6	55.0	59.8	63.6	68.2	71.8
Net debt/EV	-	-	-	48.0	55.3	60.4	79.8	NM
Capex / depreciation %	9.6	NM	NM	NM	NM	NM	NM	NM
Capex / revenue %	2.6	NM	NM	NM	NM	NM	NM	NM
EBIT / net interest	0.9	0.8	0.1	1.6	1.6	1.6	1.7	1.7
Dividend cover (UBS)	-	-	-	0.2	0.7	0.4	0.5	0.5
Div. payout ratio (UBS) %	-	-	-	NM	145.9	251.6	199.8	195.1
<b>Revenues by division (US\$m)</b>	<b>12/12</b>	<b>12/13</b>	<b>12/14</b>	<b>12/15E</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>12/19E</b>
Others	16	17	126	486	687	882	1,476	1,935
<b>Total</b>	<b>16</b>	<b>17</b>	<b>126</b>	<b>486</b>	<b>687</b>	<b>882</b>	<b>1,476</b>	<b>1,935</b>
<b>EBIT (UBS) by division (US\$m)</b>	<b>12/12</b>	<b>12/13</b>	<b>12/14</b>	<b>12/15E</b>	<b>12/16E</b>	<b>12/17E</b>	<b>12/18E</b>	<b>12/19E</b>
Others	5	5	7	189	300	397	706	930
<b>Total</b>	<b>5</b>	<b>5</b>	<b>7</b>	<b>189</b>	<b>300</b>	<b>397</b>	<b>706</b>	<b>930</b>

Source: Company accounts, UBS estimates. (UBS) metrics use reported figures which have been adjusted by UBS analysts.



**Forecast returns**

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Forecast price appreciation	+9.4%
Forecast dividend yield	3.9%
Forecast stock return	+13.3%
Market return assumption	5.6%
Forecast excess return	+7.7%

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**Statement of Risk**

Risks to our investment thesis include: 1) corporate conduct as many board members are also on SunEdison's board; 2) contract risks as contracted assets comprise all of the portfolio; 3) reliance on wind power could create variability in generation output and thus potentially negatively affect earnings and distributions; 4) the current state of credit markets that has limited the companies' flexibility to return excess cash to shareholders; 5) unknown impact from a potential carbon legislation. Other investment risks include abrupt changes in weather patterns, sharp slowdown in economic demand, interest rate risks, and disruption of trading activity in power markets; 6) actual commodity prices differing significantly from our assumptions; 7) political and regulatory intervention to change the structure of competitive markets in response to high power prices and insufficient new build; 8) decrease of Investment Tax Credits to 10% in 2017.

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12-Month Rating	Definition	Coverage <sup>1</sup>	IB Services <sup>2</sup>
Buy	FSR is > 6% above the MRA.	47%	37%
Neutral	FSR is between -6% and 6% of the MRA.	42%	32%
Sell	FSR is > 6% below the MRA.	11%	21%
Short-Term Rating	Definition	Coverage <sup>3</sup>	IB Services <sup>4</sup>
Buy	Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.	less than 1%	less than 1%
Sell	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	less than 1%	less than 1%

Source: UBS. Rating allocations are as of 31 December 2014.

1:Percentage of companies under coverage globally within the 12-month rating category. 2:Percentage of companies within the 12-month rating category for which investment banking (IB) services were provided within the past 12 months.

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**UBS Securities LLC:** Julien Dumoulin-Smith; Michael Weinstein; Paul Zimbardo.

## Company Disclosures

Company Name	Reuters	12-month rating	Short-term rating	Price	Price date
<b>Consolidated Edison</b> <sup>16</sup>	ED.N	Sell	N/A	US\$63.14	27 Feb 2015
<b>Duke Energy</b> <sup>2, 4, 5, 6a, 6b, 7, 16</sup>	DUK.N	Neutral	N/A	US\$78.55	27 Feb 2015
<b>Edison International</b> <sup>2, 4, 6a, 16</sup>	EIX.N	Neutral	N/A	US\$64.25	27 Feb 2015
<b>Empire District Electric Company</b> <sup>16</sup>	EDE.N	Sell	N/A	US\$25.35	27 Feb 2015
<b>NextEra Energy</b> <sup>2, 4, 5, 6a, 16</sup>	NEE.N	Buy	N/A	US\$103.46	27 Feb 2015
<b>NextEra Energy Partners LP</b> <sup>2, 4, 6a, 16</sup>	NEP.N	Neutral	N/A	US\$39.45	27 Feb 2015
<b>NRG Energy Inc.</b> <sup>16</sup>	NRG.N	Buy	N/A	US\$23.98	27 Feb 2015
<b>NRG Yield</b> <sup>16</sup>	NYLD.N	Neutral	N/A	US\$51.31	27 Feb 2015
<b>Pinnacle West Capital Co.</b> <sup>4, 6a, 16</sup>	PNW.N	Neutral	N/A	US\$64.08	27 Feb 2015
<b>SunEdison Inc.</b> <sup>13, 16</sup>	SUNE.N	Buy	N/A	US\$22.14	27 Feb 2015
<b>TerraForm Power, Inc.</b> <sup>16</sup>	TERP.O	Not Rated	N/A	US\$34.73	27 Feb 2015
<b>Westar Energy, Inc.</b> <sup>6a, 16</sup>	WR.N	Neutral	N/A	US\$38.85	27 Feb 2015

Source: UBS. All prices as of local market close.

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