

Renewable Energies in Europe

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*This document does not constitute an offer, a proposal
nor a solicitation to invest in any fund.*

*The Fund project has not been authorized by any other
supervisory authority.*

Strictly Confidential



Committed to sustainable infrastructure investing

Mirova, "Energy Investor of the Year, Europe" award winner at Infrastructure Investor Awards 2016

With over 15 years' experience in the structuring and management of renewable energy and infrastructure funds, Mirova strives to provide prominent institutional clients with long-term investment opportunities in greenfield and brownfield projects across Europe while supporting the development of sustainable and resilient infrastructures surrounding communities and local economies.

Discover more at www.mirova.com

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Mirova

Mirova is an affiliate of Natixis Investment Managers, dedicated to socially responsible investing

- ▶ Mirova's philosophy: integrating sustainable development in investment strategies can generate long term value for investors
- ▶ Multi-strategy alternative investment fund manager (AIFM), offering a broad range of ESG solutions

Organisation



Expertise*



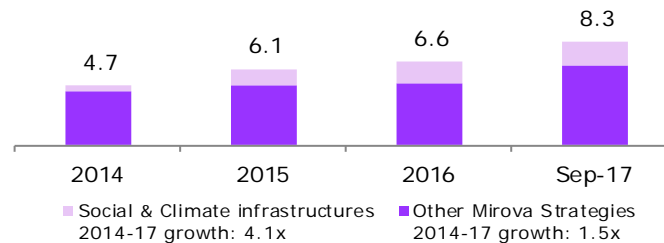
Credentials/pledges



Mirova Key features*

- 1984:** Natixis started ESG strategies
- 2002:** First renewable fund (Fideme)
- 72** multi-disciplinary experts at Mirova
- 13** different nationalities
- 2** locations: **Paris and Boston**

Mirova Assets Under Management*



(*) Figures as of September 30, 2017

Reference to a ranking and/or an award does not indicate the future performance of the UCITS/AIF or the fund manager



Renewable Energy Funds Key Features

History of investment vehicles raised and deployed

Mirova's investment vehicles have been expanding due to the support of a growing investor base

- ▶ Mirova raised ca. €500m through three funds to finance renewable energy projects in Europe
- ▶ 1.4GW of new capacity installed (in which 1.2GW of wind)



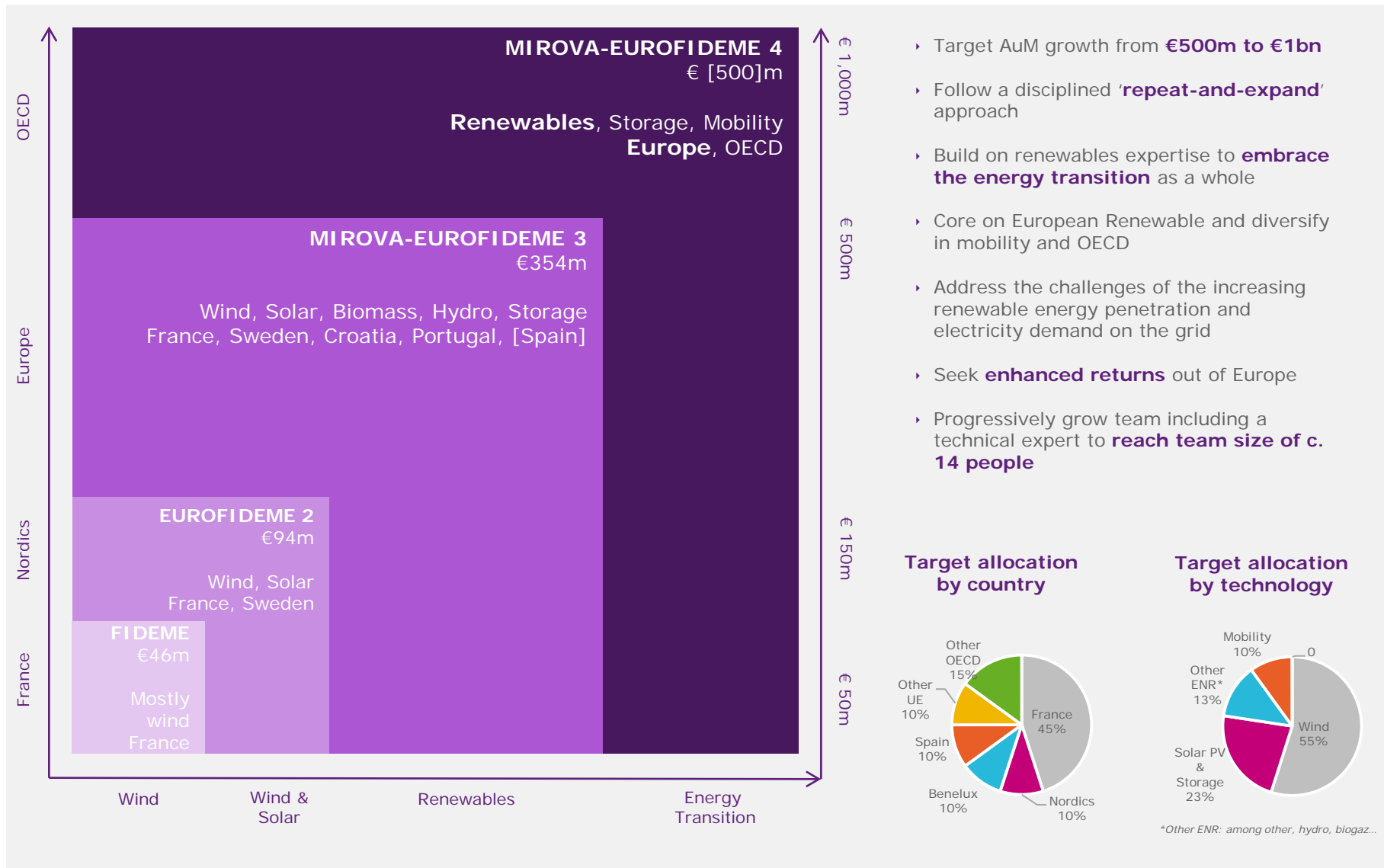
	FIDEME	EUROFIDEME 2	MIROVA-EUROFIDEME 3
AUM	€ 46m	€ 94m	€ 350m
TYPE	French FPCI (2002)	French FPCI (2008)	French FPCI (2014)
MATURITY	13 years	13 years	10 years
LPs	Institutional investors and public investor Ademe and CDC	Institutional investors (insurance, pension funds, banks, fund of fund) Repeat investors : 75% of FIDEME	Institutional investors (EIB, insurance, pension funds, banks, fund of funds, family-offices, foundations) Repeat investors : All of EF2 but 1
STRATEGY	Greenfield Wind France	Greenfield Wind, Solar France, Nordics	Greenfield, Brownfield Wind, Solar, Hydro, Biomass Europe
STATUS	Fully invested since 2007	Fully invested in 2014	>95% committed
KPIs	14% gross fund IRR (based on estimated exits) 1.5x money multiple 6 year payback 5% average annual cash distribution 1 st investment fund specialised in renewable energy projects in France	7-9% gross IRR (estimated) End of "J-curve" in 2012 Distributions from 2013	10-12% gross IRR (estimated) End of "J-curve" in 2015 Distributions from 2016



*Note: The aforementioned figures relate to previous years and past performance is no indicator of future performance. Reference to an award or label is no indication of future performance. Investments in infrastructure strategies are reserved for specific investors, as defined by their respective regulatory documentation. The mentioned funds have not been authorized by any other supervisory authority. **These funds are mainly subject to loss of capital risk.** Source: Mirova as of September 30, 2017*

MEF4 Fund Project in Mirova's Growth Story & Strategy

From €50m in French wind farms in 2008 to €1bn in global assets in 2018



European Markets' Long Trends in Renewable Energies

➤ Main key drivers

Strong and reiterated political support

➤ Renewed policies underpinning renewable energy penetration:

- EU ambitious RE goals: 20% in 2020, 27% in energy mix in 2030
- Most countries have clear targets (French PPE: 32% RE in 2030)

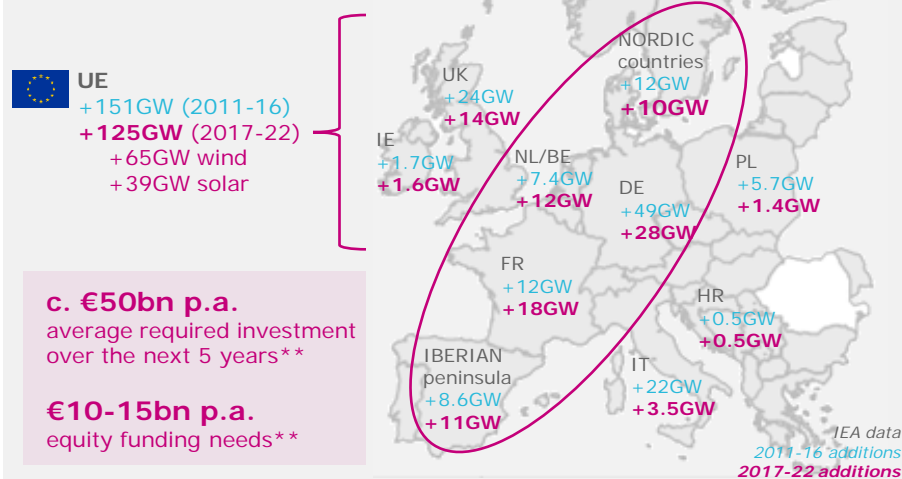
➤ RE: 84% of the new installed electric capacities in the EU in 2017.

- 24GW renewable energy installed in the UE in 2017 (+20%)*.
- Wind remains the leader with 15,7 GW installed (55% of total capacity)
 - Germany: 6,6 GW, UK: 4,3 GW and France: 1,7 GW
 - On-shore 12,5GW, Off-shore 3,2 GW
- Solar installations of 6 GW (21% of total capacity)

➤ With now 550 GW, renewable energies cover 35% of the EU electricity consumption

*excluding large hydro, source: BNEF 2017

Robust EU growth driven by France, Benelux and Iberia

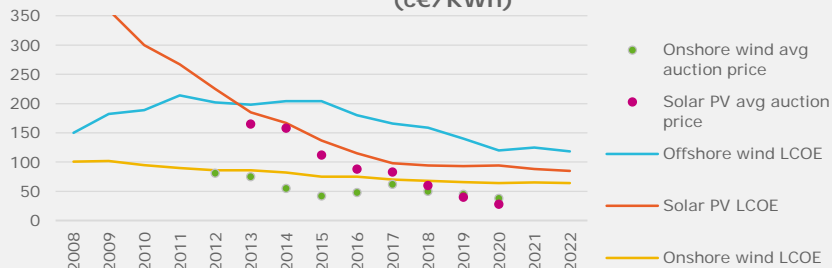


Everfalling wind and solar production cost

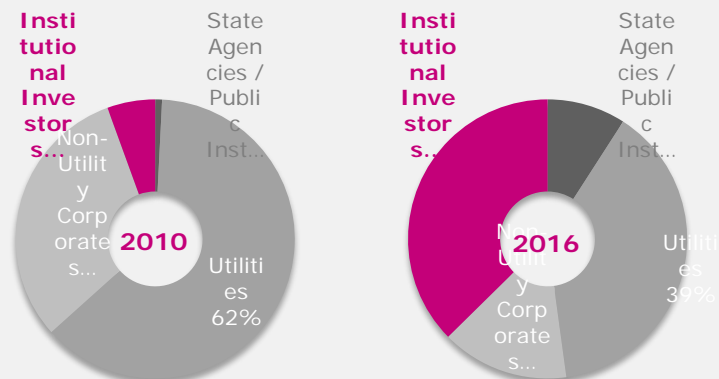
➤ Significant decrease in cost of production due to:

- technological advancements (conversion efficiency, lifetime, acoustic)
- competitive pressures (manufacturing overcapacity, severe competition)

Global average LCOEs and average auction results** (c€/KWh)



Increasing need for institutional investment



Change in equity mix in wind energy projects in Europe, 2010 and 2016

Source: BNEF 2017

** Sources: Renewables 2017 main case forecasts, IEA; Renewable Capacity Statistics 2017, IRENA. Croatia estimate based on UE 2020 target. Investment needs estimate based on IEA capacity forecasts. Higher / lower cases assuming a 10-20% reduction in prices to 2022

New booming sectors supporting the energy transition

New synergies for renewable energies



Energy Storage

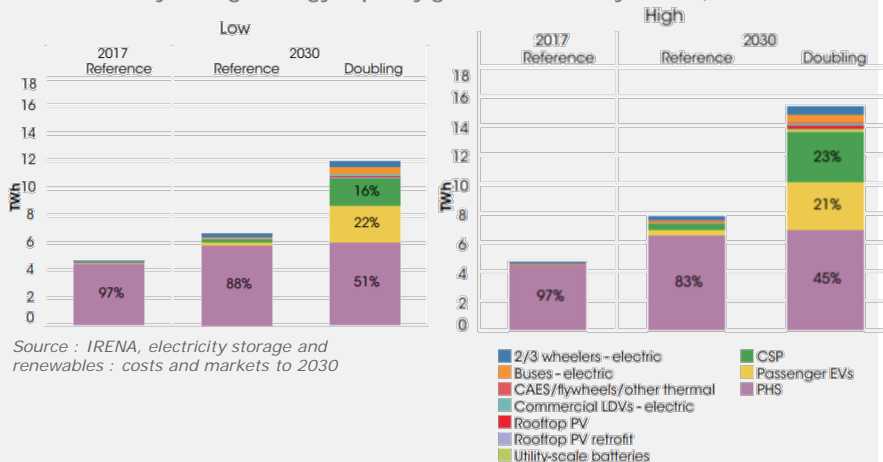
Market poised to grow within 5 to 15 years

- ▶ Global energy storage market trajectory in 2016-2030 to mirror solar PV trajectory over 2000-2015 period, **doubling 6 times in 15 years** (BNEF 2017)
- ▶ Batteries production cost to **decline by as much as 35% over 5 years**, displacing a significant portion of future gas-fired technologies (Lazard 2017)

Battery/renewable projects will drive increasing financing needs

- ▶ 20-50MW battery projects already exist in all major countries, including several solar/storage colocations in the UK (Renewables Obligation Certificate recently extended to storage projects) and Germany
- ▶ World's largest lithium battery plant (100MW) built in 100 days by Tesla and Neoen in Australia's most wind dependent state in 2017
- ▶ French overseas territory have storage dedicated auction since 2013

Electricity storage energy capacity growth scenarii by source, 2017 -2030



Advanced Mobility

Charging stock trend follows EVs growth

- ▶ 60% EVs growth in 2016 (750k sales) – Huge growth expected
- ▶ 72% growth in public charging infra stock (=1 for 6 EVs)

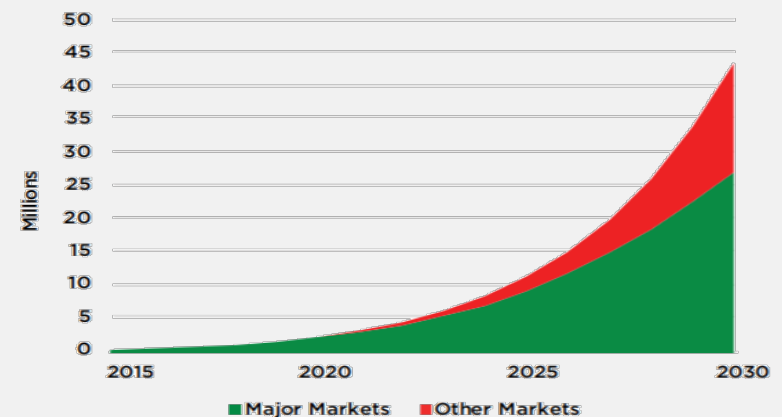
EVI * countries support

- ▶ € 12bn funding from European Fund for Strategic Investment for low-carbon & sustainable urban mobility
- ▶ France's Loi de Transition Energétique: 7 million charging outlets by 2030

Private funding needs are arising

- ▶ 2016: record \$41.6bn asset finance for smart meters, storage & EVs
- ▶ Highway charging infra projects (US, Netherlands), Bolloré initiative...

Figure 13: Global annual EV sales to 2030 based on REmap



*Source Irena

MEF4 Fund Project Vision

Add a disciplined expansion to a robust and proven investment strategy

Mirova has been implementing its strategy consistently across its renewable funds for the past 15 years

- ▶ Leverage on continuous growth of the European renewables market and existing relationships to invest in mature technologies
- ▶ Expand for maximum 15% to other OECD countries alongside historical partners including developers and manufacturers (Australia, Canada, US)
- ▶ Continue to pursue attractive opportunities in storage and address electrical mobility

REPEAT

EXPAND

Strategy	REPEAT					EXPAND	
	Mature renewable energy	Europe	Co-investments with industrials	c.€20m tickets in equity and mezzanine	From late development to start of operation	Leverage partners expansion in OECD	Electrical mobility
	High pace of capital deployment	Dedicated investment team of 9 experts + Mirova resources	Extensive sourcing capabilities	Proprietary ESG analysis to assess and monitor assets	Experience of complex transactions	More flexibility on exit with longer hold	Expand team to cope with Larger investment scope
Attractive vehicle for investors	Reasonable fee structure compared to fund size & complexity	Alignment of interest	Institutional investors Low SCR	Reduced J-curve	Co-invest opportunities	Fee discounts based on ticket size	LP/GP French vehicle



Economics of renewable energy projects



The cost of renewable energy projects

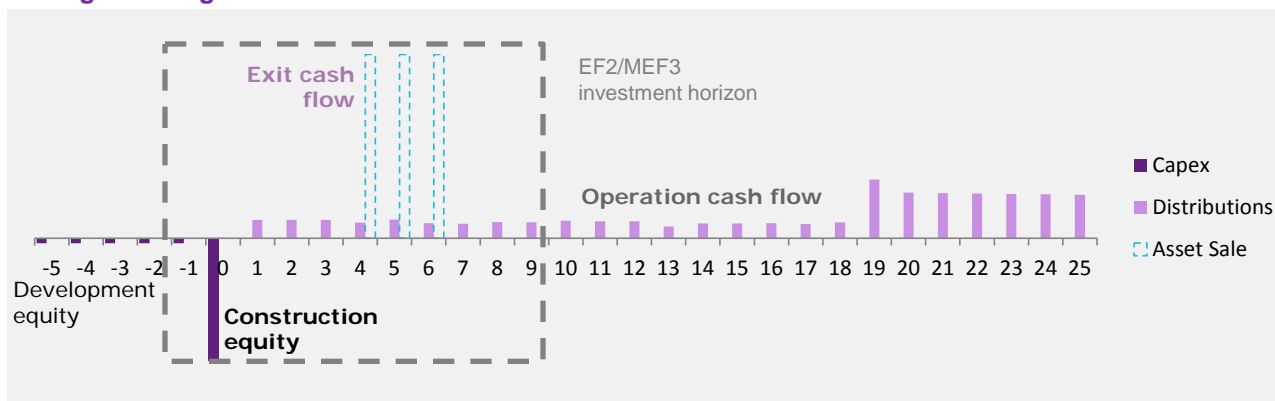
Renewable Energy Projects Features

- Initial investment which helps finance construction
- Stable flow of incomes generated by the corresponding project (*)

Incomes have a similar profile to those from more conventional infrastructures

- Project financing structure (SPV, fixed-rate debt of 15 to 18 year duration, long-term contract)
- Short construction period (3 months to 1 year) – 25-year project duration
- 15 to 20-year duration fixed-price power purchase agreement, linked to the inflation rate
- Low volatility & Low correlation with conventional asset classes

Cash generating business model

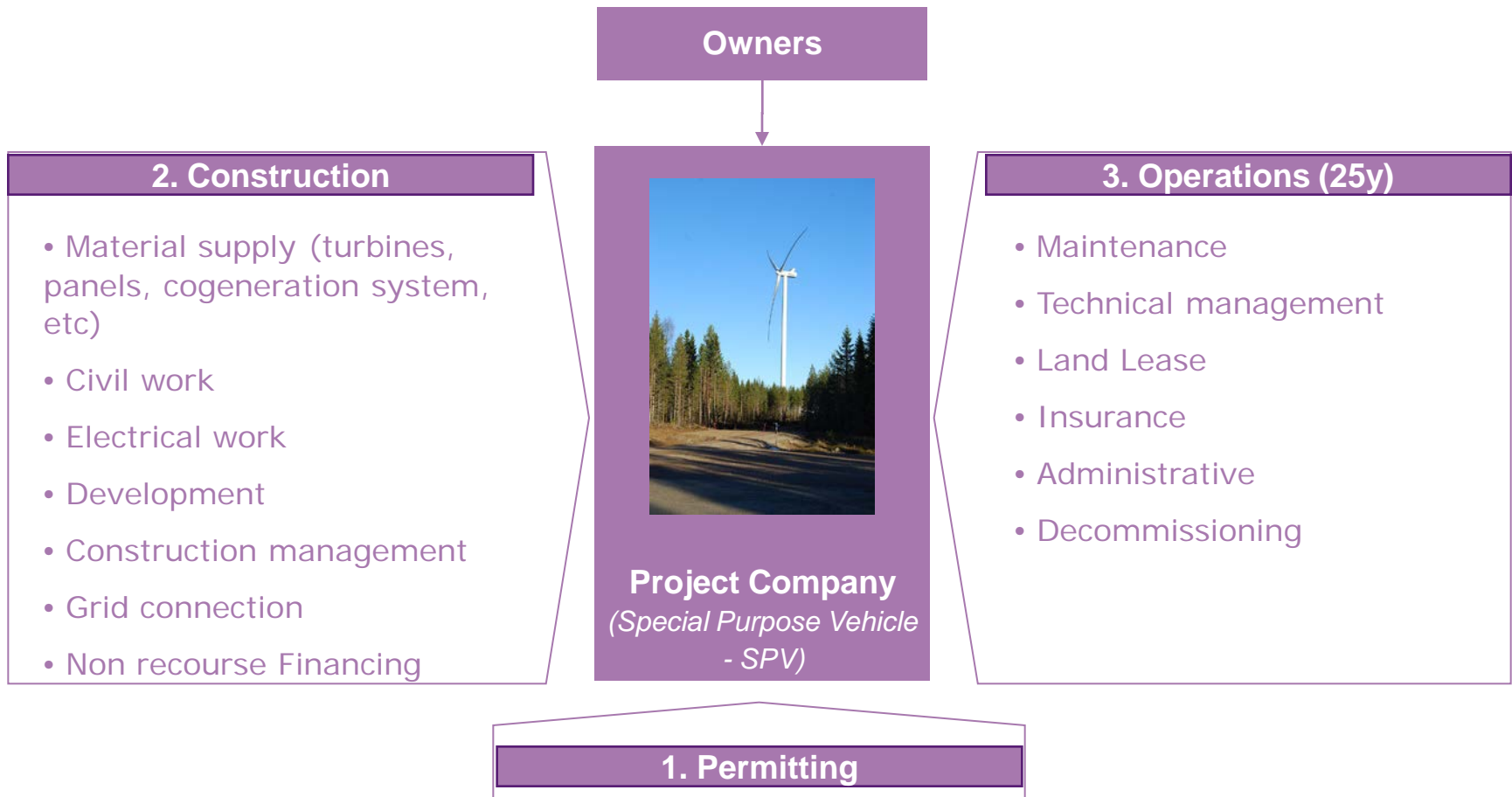


- ▶ **25Y+** asset life
- ▶ **3-12** month construction period
- ▶ **15-to-20**-year inflated fixed-price power purchase
- ▶ **15Y+** fixed-rate non-recourse debt
- ▶ **50%-80%** bank leverage

Source : Mirova

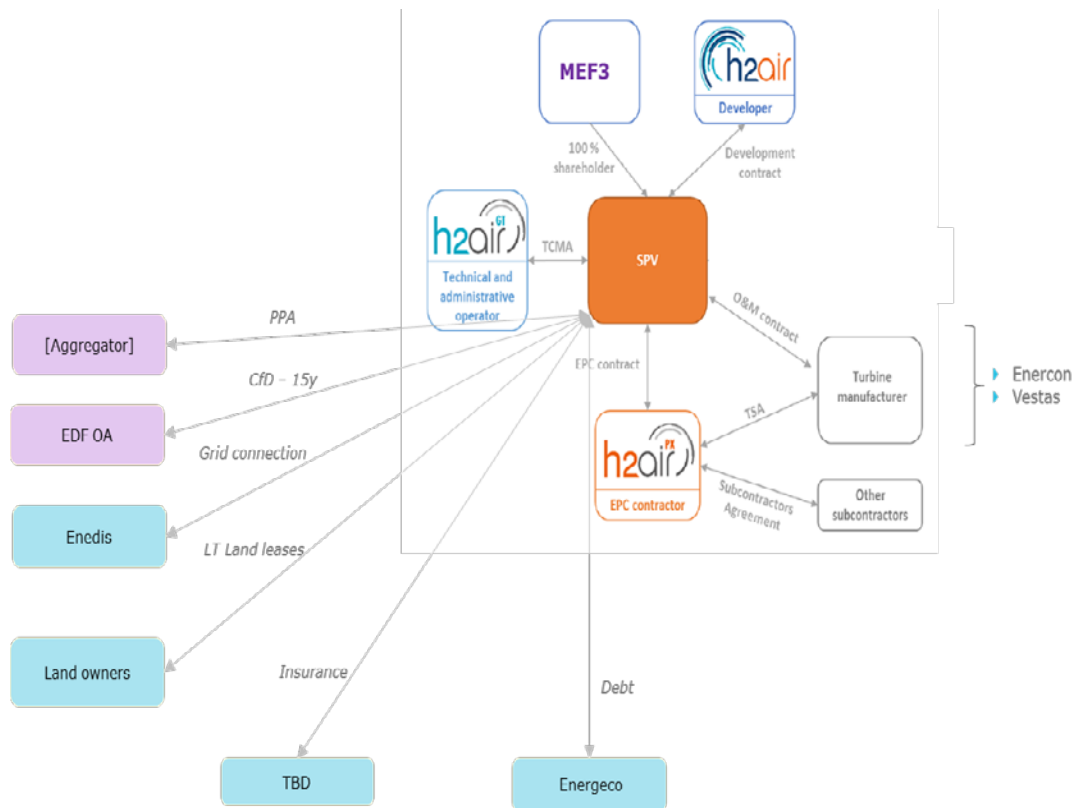


Standalone legal structure and contractual frame





Standalone legal structure and contractual frame



Contemplated contractual structure

Construction phase

- The construction is undertaken in multi contracts, or EPC
- Interface between the BOP / Turbine supplier
- Last development from developer
- Project finance debt and insurance are in place

Operation phase

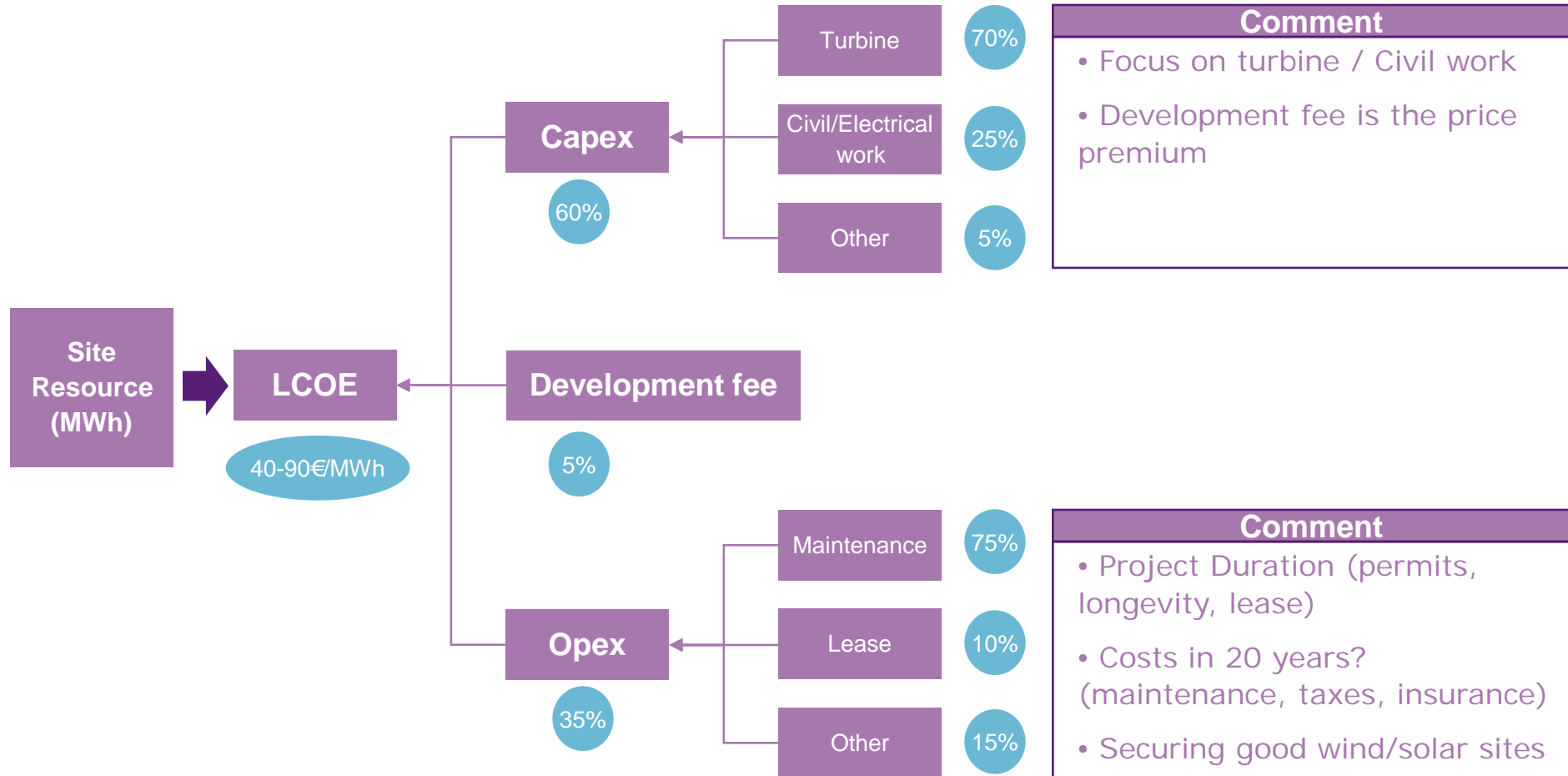
- The Technical & Commercial Management of the wind farms is undertaken by the developer or dedicated players for an initial period of 15 years.
- O&M of the equipment is contracted over the long term, with availability guarantees (97%).

Sale of electricity

- The Feed-in-Tariff or CfD is contracted to EDF OA, the national energy and electricity regulator
- EDF provides a 82 €/ MWh feed-in-tariff inflated over 15 years.
- Alternatively, the electricity can be sold to the market, or through a private PPA (industrial, utilities, GAFA)



The cost of renewable energy projects

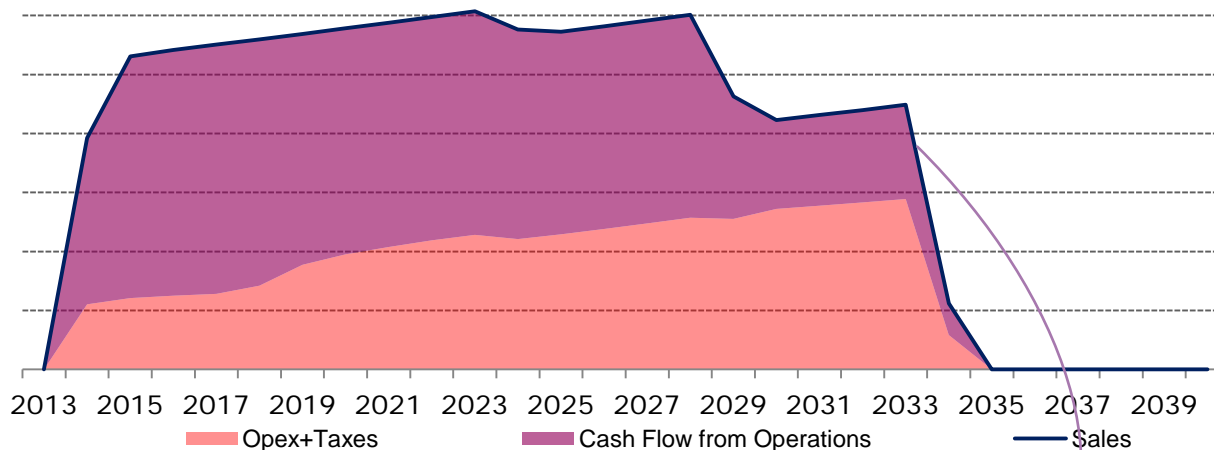


LCOE = Levelised cost of energy ; Capex = capital expenditure = investment to build a project ; Opex = operating costs
Illustrative numbers refer to a standard wind project in France excluding any financing cost



Selling electricity with a profit

Operating profitability of a standard wind farm in France...



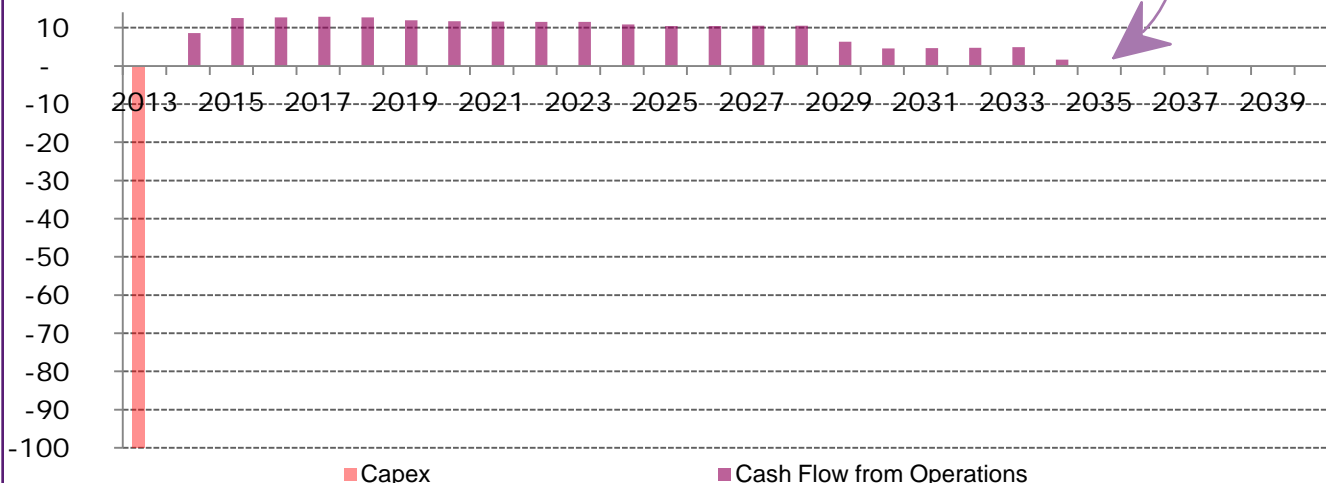
Electricity Output

- Extrapolation of long term measurements on site
- Reliable but seasonality and year on year volatility

Electricity Price

- Purchase price agreement
- Feed-In Tariff, Merchant, Green certificate
- Volatility

...to profitability on capital employed



Key metrics

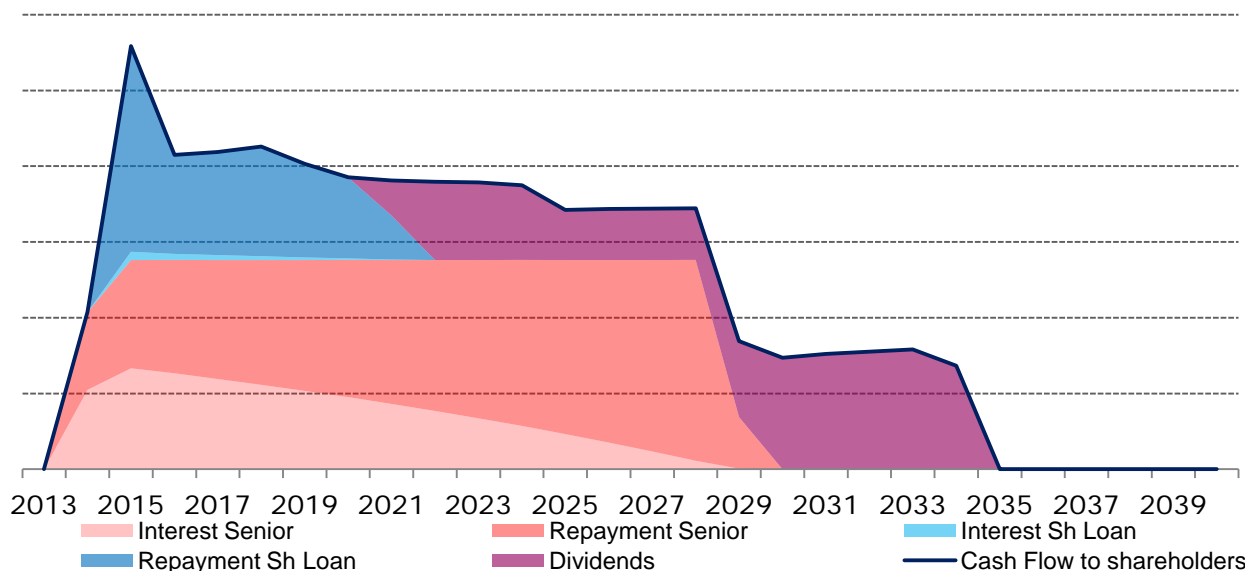
- EBITDA = 80% wind
- Money multiple = 1.7-2.0x
- Internal rate of return (IRR) = **5-7% (unlevered)**



How much debt can the project get?

Banks' margin of safety and debt sizing

Use of the project's operating cash flow to repay debt



DSCR

- Debt service coverage ratio
- $(\text{EBITDA} - \text{Income tax}) / \text{Debt service in a given period}$
- Indicator of the capability of a project to repay its debt

1 Debt sizing

- 20% margin on P90 case (already 10-15% under equity case) = DSCR of 1.20x
- Electricity prices (FiT or forward)
- Maximum leverage (~80%)
- 15 years (same duration as PPA)

2 Security package

- Pledge on the shares of the investor and the assets + Reserve account
- Control over all contracts in case of default (the bank can take over the project)
- However no recourse on investor

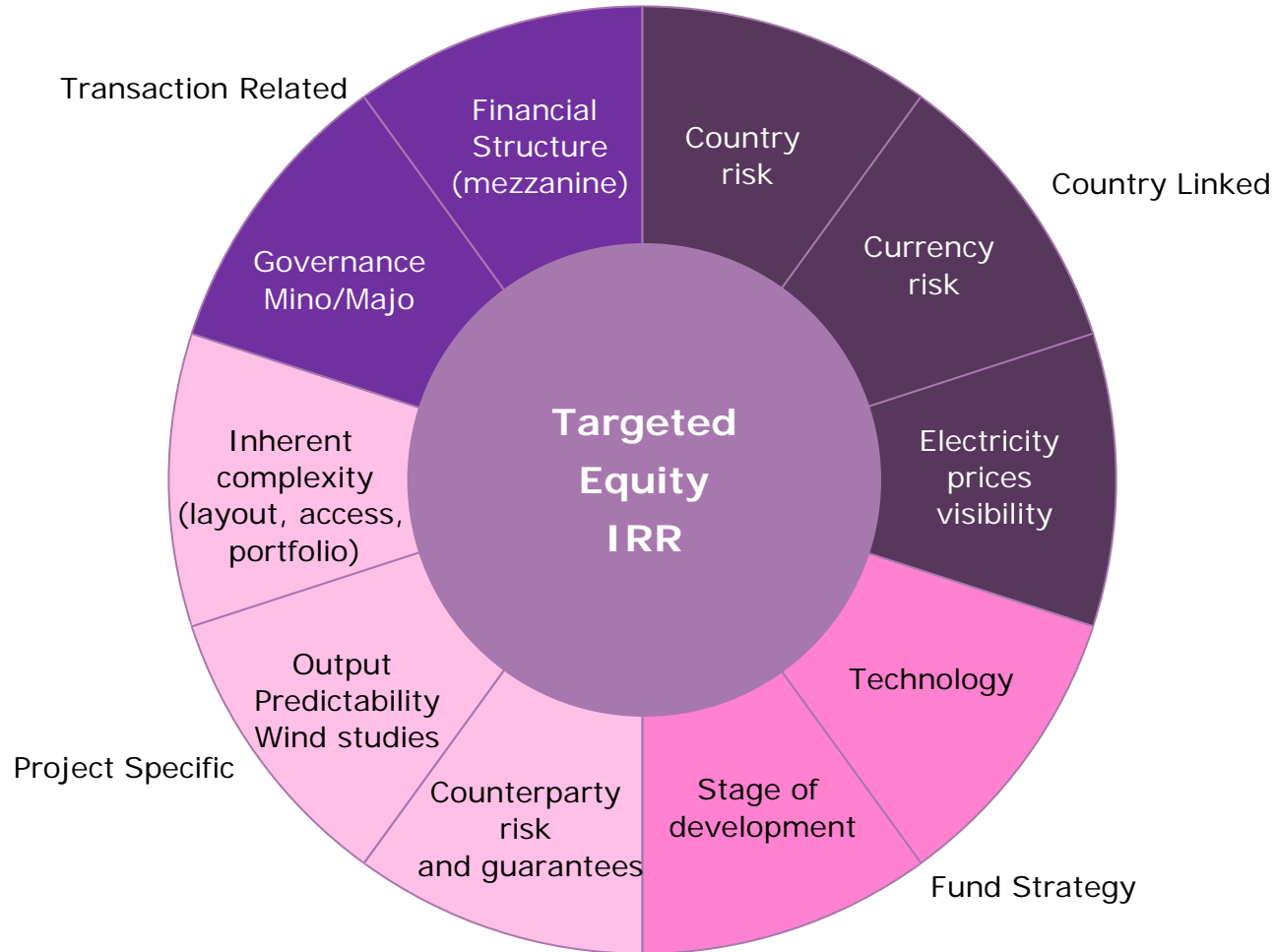
3 Control over distribution

- Distribution to shareholders is usually restricted by several conditions: capacity of the project to repay its debt measured with DSCR, respect of leverage ratio, etc.



What are the drivers of equity IRR?

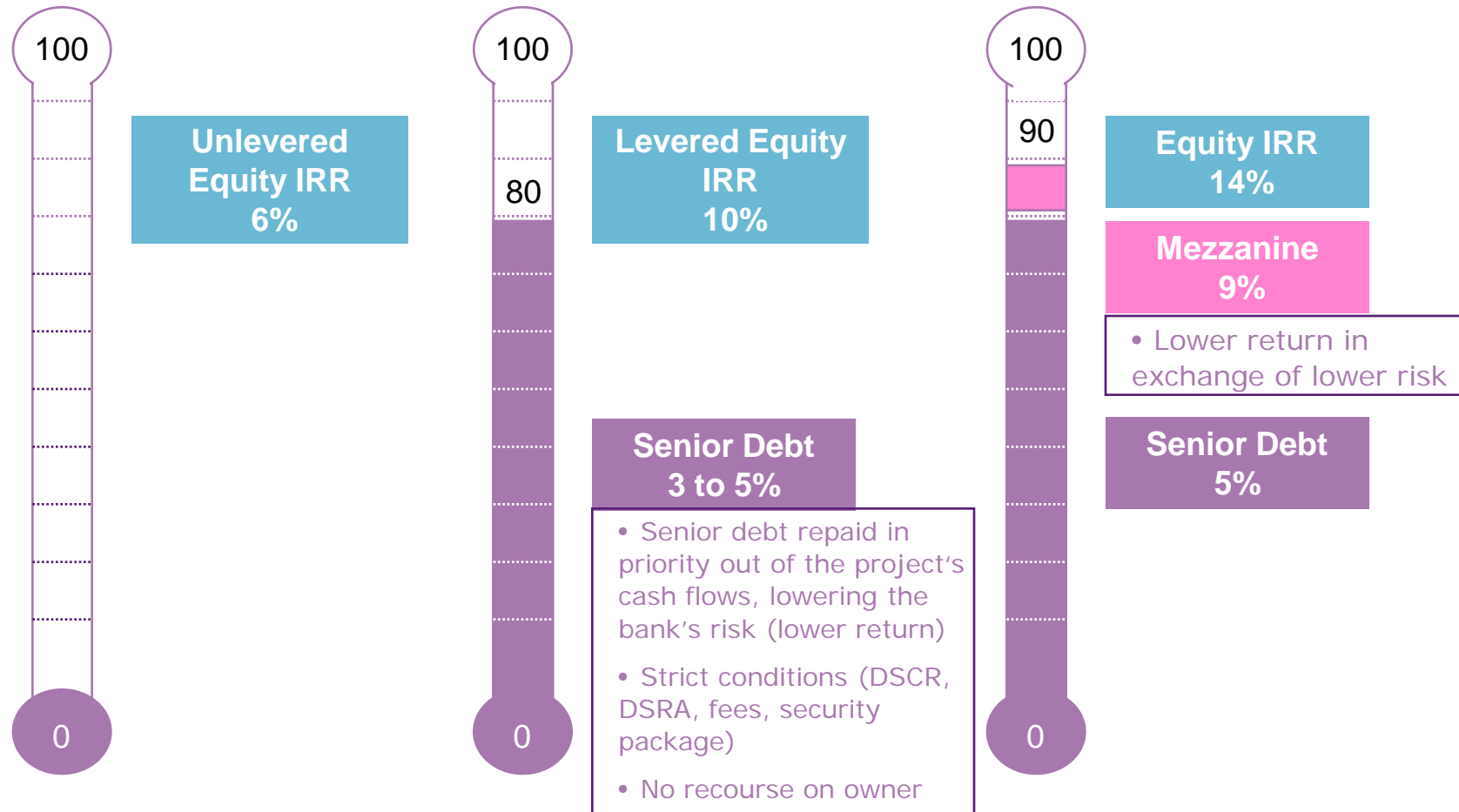
« go/no go » risk vs. IRR adjustment risk





Slicing risk/reward to improve return on equity

Funds to finance the initial investment







Case study : Wind Project in Sweden

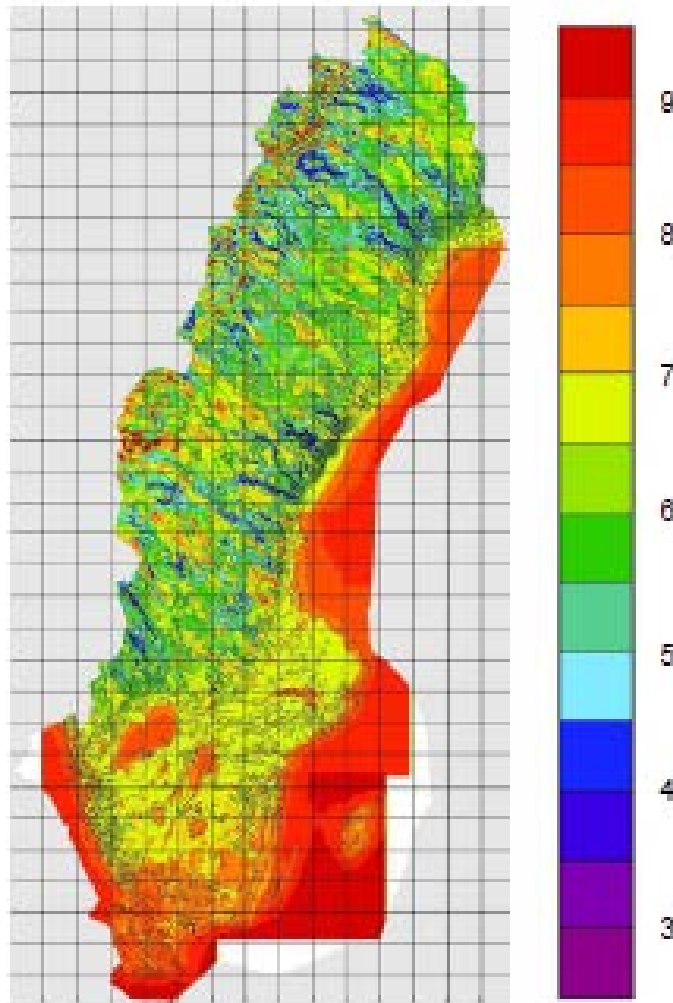


Varsvik

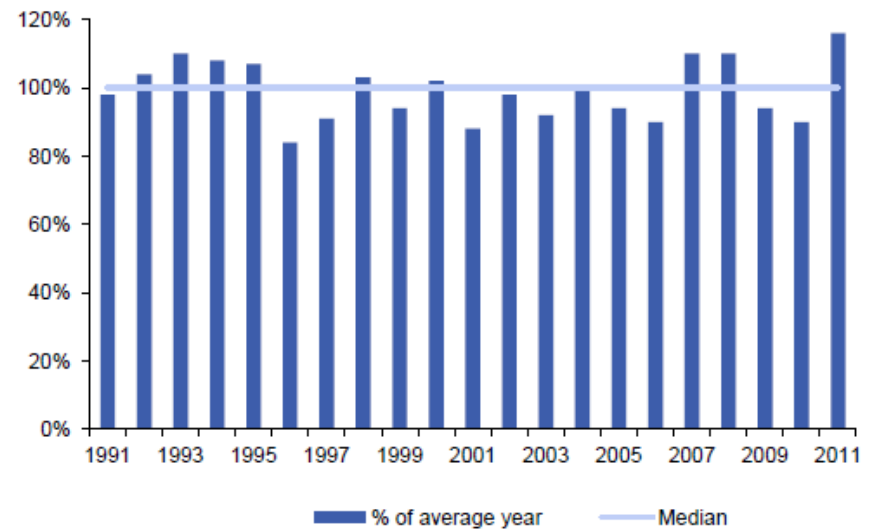


Decision Matrix

Specifications	1	2	3	4	5	Varsvik	6	7	8	Sirocco
Size	35 MW	24 MW	11,5 MW	31 MW	62 MW	51 MW	25 MW	200 MW	78 MW	200 MW
Developer keeping a share in the project	✓	x	x	x	x	✓	x	x	x	✓
Debt in place?	x	x	x	x	x	✓	x	✓	x	✓
Turbine tendering done?	✓	✓	✓	✓	x	✓	x	✓	✓	✓
Wake effect from other wind farms?	x	✓	x	x	✓	✓	✓	✓	✓	✓
Developer staying to manage operations	x	✓	✓	✓	x	✓	x	✓	✓	✓
Operational risk	x	✓	✓	x	x	✓	x	✓	x	✓

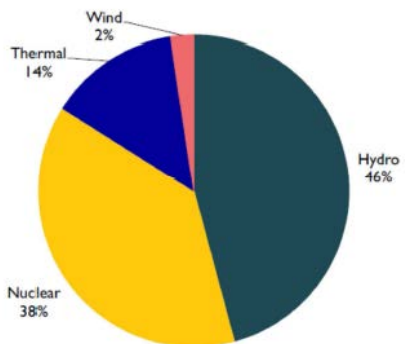


Energy content of the wind



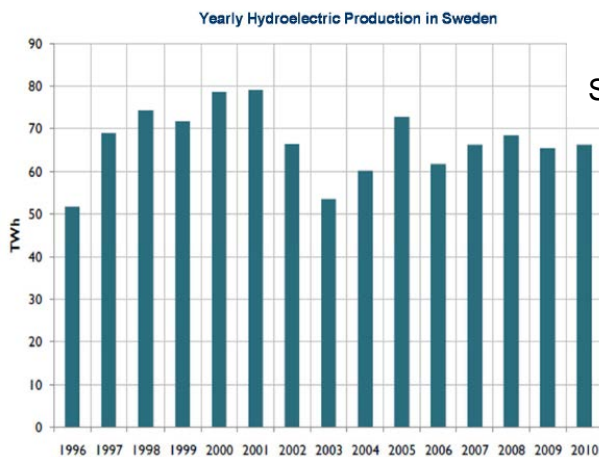


Actual Generation by Technology (145 TWh total)



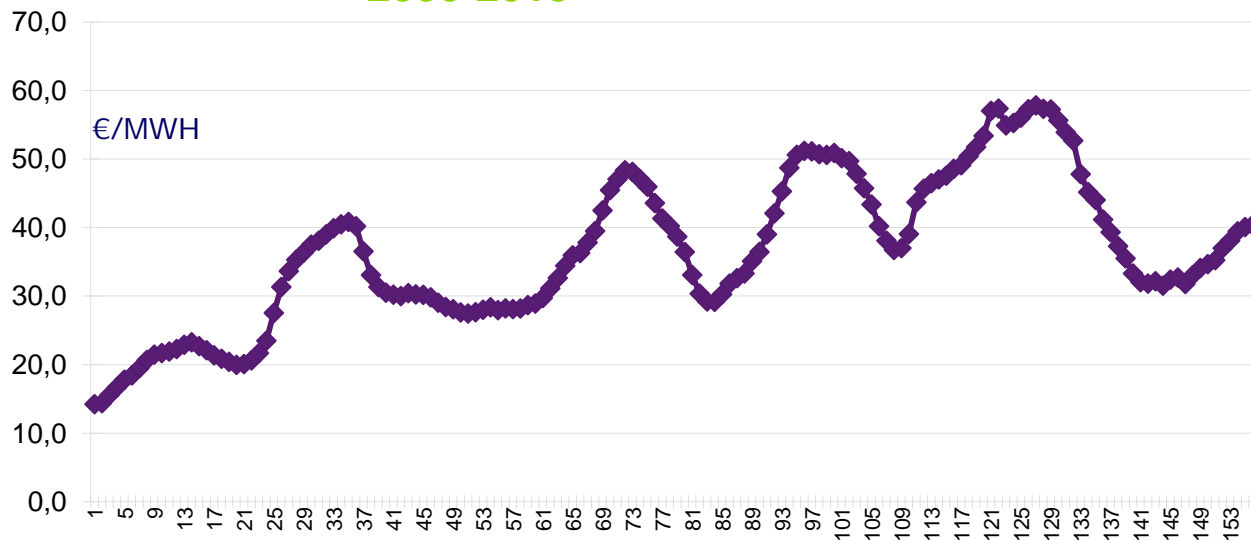
Source: Redpoint June 2011, figures for full year 2010

Swedish hydro production (1996-2010)



Source: Redpoint June 2011

Electricity prices - Sweden - 12 month average - 2000-2013

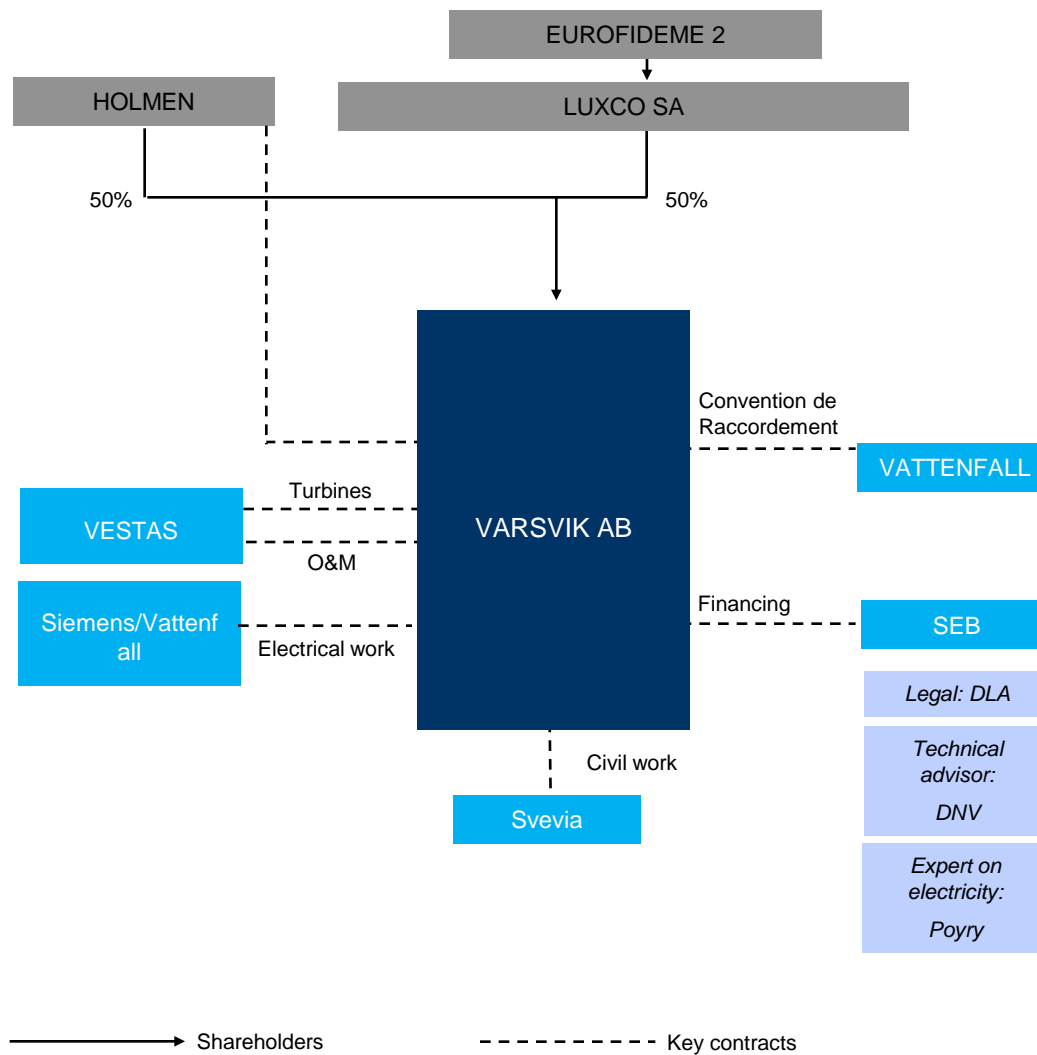


Source: NordPool





Varsvik





Varsvik

Allocation des free cash flows sur la durée du projet

