

# Renewable Energies in Europe

## Market Overview – Raphael Lance

Roma June 2018



*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  
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# Mirova

## Overview

**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 responsible investing solutions

### Organisation



### Mirova Expertise



### Credentials/pledges



### Mirova Key features

- 1984:** Natixis started ESG strategies
- 2002:** First renewable fund (Fideme)
- 75** multi-disciplinary experts at Mirova
- 13** different nationalities
- 4** locations: **Paris, London, Lux and Boston**

### Mirova Assets Under Management (in bn€)



Source: Mirova as of March 31, 2018



References to a ranking, an award and/or a rating do not indicate the future performance of the latter/the fund or the fund manager.




## 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](http://www.mirova.com)

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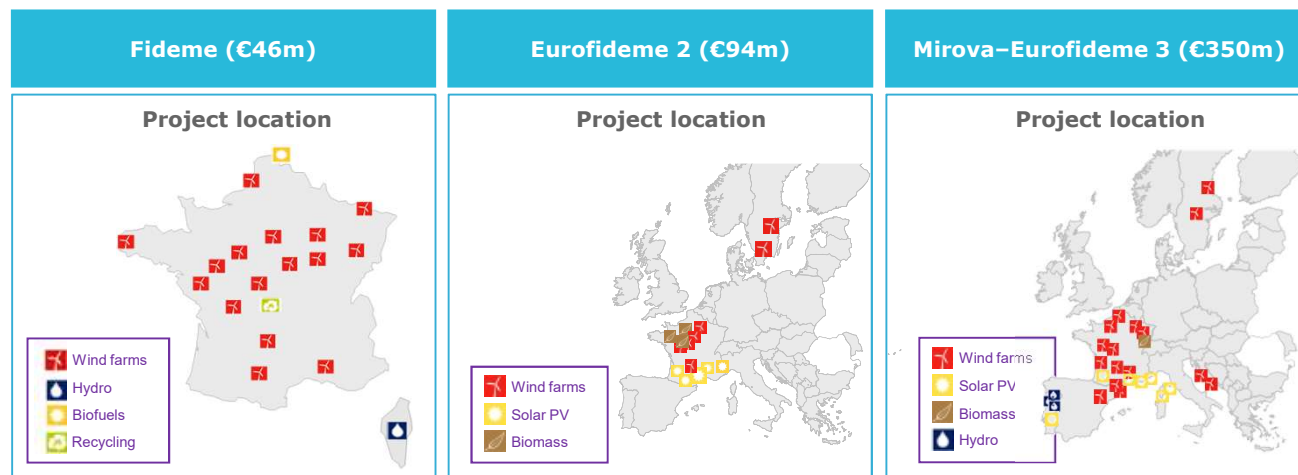
Holmen Varsvik (France) | 51MW | Vestas V112  
Invested by Mirova-Eurofideme 3 in 2014



# Renewable Energy Investment Track Record

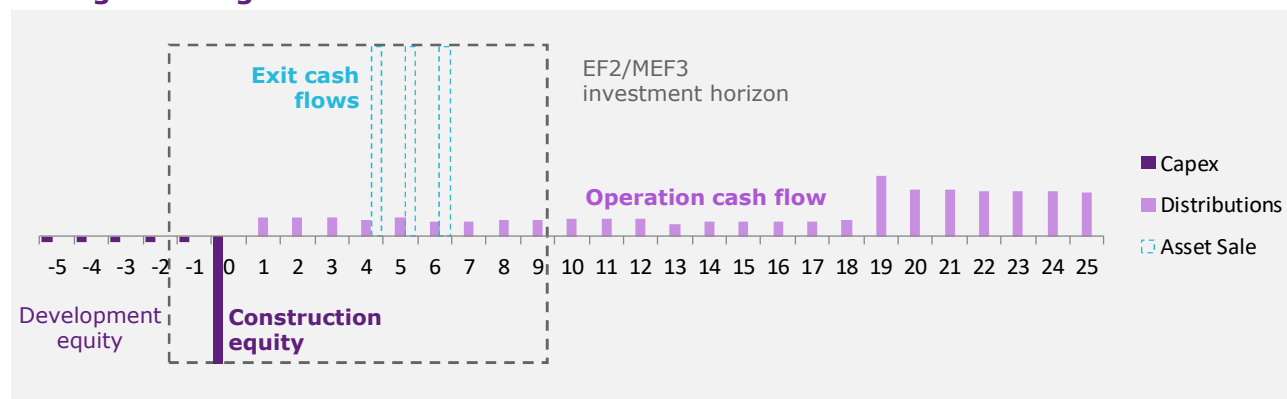
A diversified track record with an impact on the real economy

Construction of more than 170 renewable energy projects (1.7GW) in Europe for c. €2.6bn of capex through 3 funds\*



- **Diversified** geographies/technologies
- **1,410** MW of new wind capacity
- **300** MW of solar projects
- **Partnership** with key developers

## 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

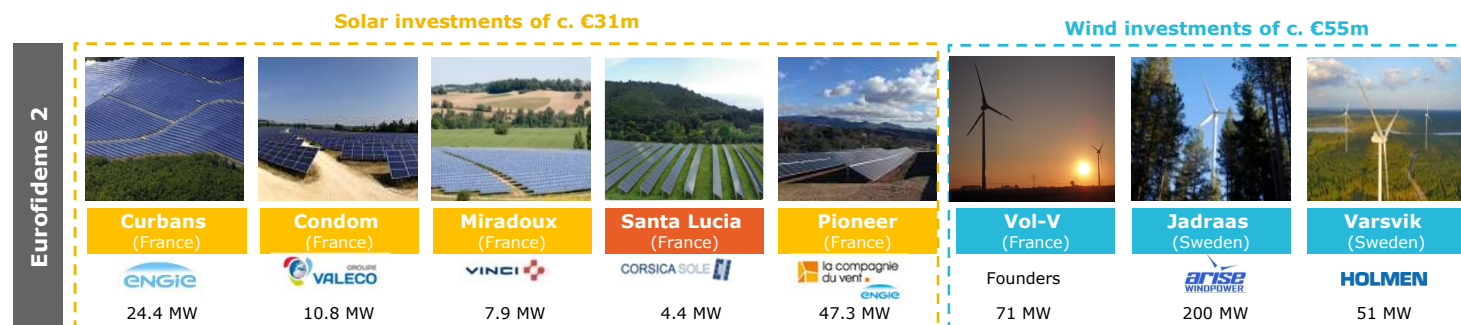
\*Including Goya and Douiche projects, which final closing is expected in Q1-2018.  
 Figures mentioned above are based on past years, which is no indicator of future performance.  
 Source: Mirova as of December 31, 2017

# Renewable Energy Investment Track Record

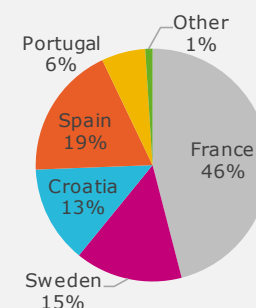
## Building up a portfolio by aggregating small- to medium-size assets

### Value creation strategy focusing on industrial partnerships to build greenfield projects using mature technologies

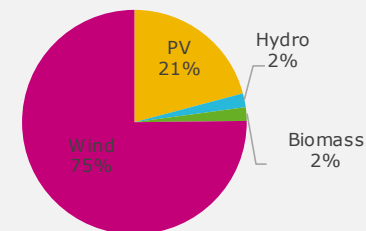
- ▶ Mostly co-investments in equity or subordinated mezzanine to align interest with industrial partners
- ▶ Most of the portfolio acquired at greenfield stage is now operating delivering recurrent cash flow, due to rapid construction



### MEF3 by country



### MEF3 by technology



# Competitive Edges – Seeking to Generate & Enhancing Returns

In-depth industry knowledge enabling attractive acquisitions and portfolio optimization

## Top industry partners



## Source attractive projects

- Aligned interest with strong partners**
- ▶ **Co-investment** with the developers/utilities preferred to full ownership to benefit from partner's development, construction & operation expertise
  - ▶ **Align stakeholders interest** through multiple mechanisms (construction price adjustments, profit sharing, market flex clauses in contracts)
  - ▶ Outpace competition in understanding **complex structures** and hence source **sizeable and diversified investments** while managing risk

*Source and structure complex projects with enhanced returns and risk management*

## Strong institutional support

- ▶ BPCE Group
  - ▶ Renewable Associations
- 

*Leveraging on the strong presence of BPCE and its renowned infrastructure expertise*

## Seeking to enhance returns throughout project life

- Hands-on asset management**
- ▶ Co-investment with **developers/utilities** and leverage on **suppliers**
  - ▶ **Renegotiate maintenance contracts** to improve return while maintaining operating risk unchanged
  - ▶ **Constant improvements considered** on insurance, leases, maintenance reserve accounts, etc.

*Save cost to improve returns while keeping the risk allocation between stakeholders immune*

## Refinancing capabilities

- ▶ Quick assessment of **value creation**
- ▶ **Attractive asset and operation track-record** (18-24 months) leading to lenders interest

*Homersol exit & refinancing with Vol-V*



*Cestas refinancing with Neoen*



*Refinance to increase profitability while maintaining the yield*

# Mirova's Special Focus on ESG

Looking at sustainability on both fund and project levels

## Impact Indicators

Impacts are measured using a lifecycle approach, taking into account not only the projects' direct impacts, but the impacts upstream (i.e. suppliers) and end-of-life (i.e. dismantling, recycling)

### Environmental

- ▶ **CO2 emissions financed:**
  - 4 tons of CO<sub>2</sub> emitted / M€ invested\*
- ▶ **CO2 emissions avoided:**
  - 90 tons of CO<sub>2</sub> avoided / M€ invested (compared to the average European mix)\*
- ▶ **Portfolio climate scenario:** level of coherence with Paris Agreement (limiting warming to ≤ 2°C)



1.5°C

- ▶ **Renewable energy capacity and production:**
  - 1,020 GWh generated from 779 MW of installed capacity\*

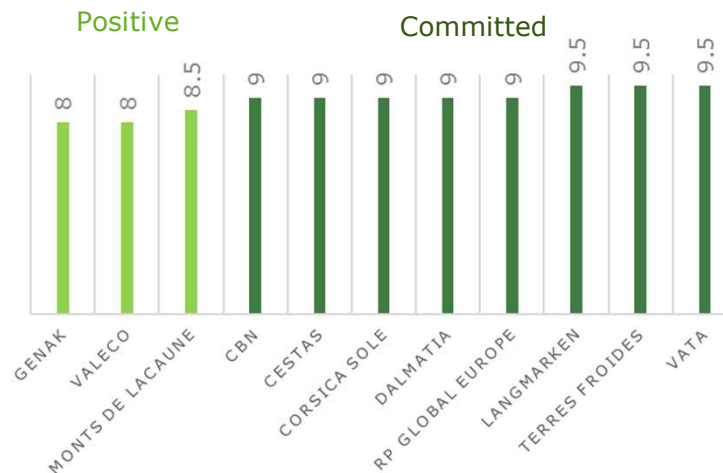
### Social

- ▶ **Job creation contribution**
  - 538 jobs in construction & installation\*
  - 26 in operation & maintenance\*

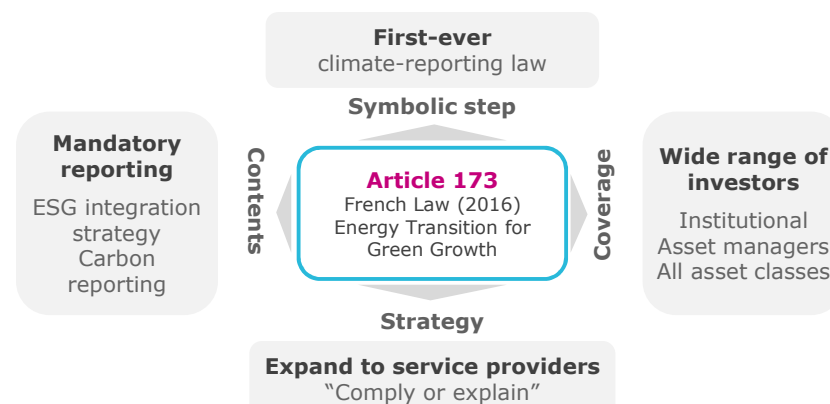
\* Example data (2017) for Mirova Eurofideme 3

## Project Level Analysis

### Sustainability Opinions\*



## France: Mandatory ESG Disclosure





# Renewable Energy Funds

## Solvency 2 Treatment

The European Commission Delegated Regulation of 2 April 2016 has introduced the creation of a new asset class dedicated to infrastructure investments.

### Transparency approach (source : E&Y April 2016)

- Preferential treatment of the eligible infrastructure shares in the sub-module of “equity risk” : **shock at 30%**
- Required condition: complete documentation of eligibility criteria
- E&Y estimates in its study that the preferential treatment will reduce the level of SCR by an average of 1.1 points:

Year		2014	2015	2016	2017	2018
SCR	Standard method	15.2%	13.9%	13.4%	13.4%	12.6%
	Preferential method	14.4%	13.2%	12.3%	12.0%	11.2%

### transparency approach

- applicable to MEF3 : Line by Line criteria analysis. Eligibility validated
- If investors avoid transparency, the units or shares of the funds are considered equity-type 1 (shock at 39%).

### Reporting

- In cooperation with EY and investors, Mirova has implemented an Ampere type matrix for each Portfolio line on a quarterly basis to enable investors to consider their investment in our Funds in look through.
- Objective: method set and ready to use since 30 June 2016.

# 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 )

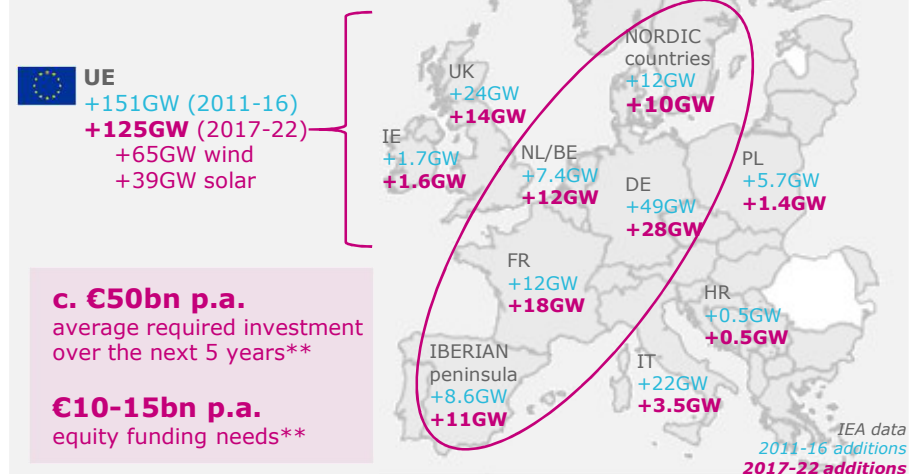
#### ➤ RE: 84% of the new installed electric capacities in the EU in 2017.

- 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

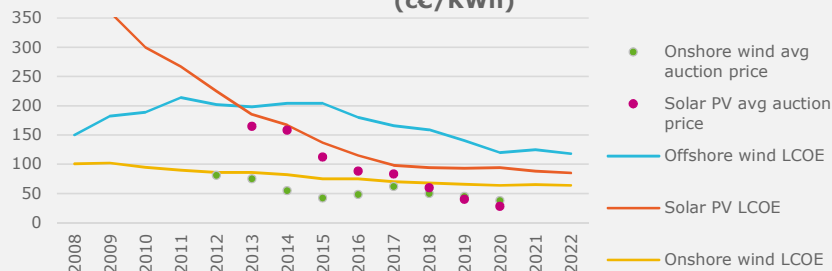


### Everfalling wind and solar production cost

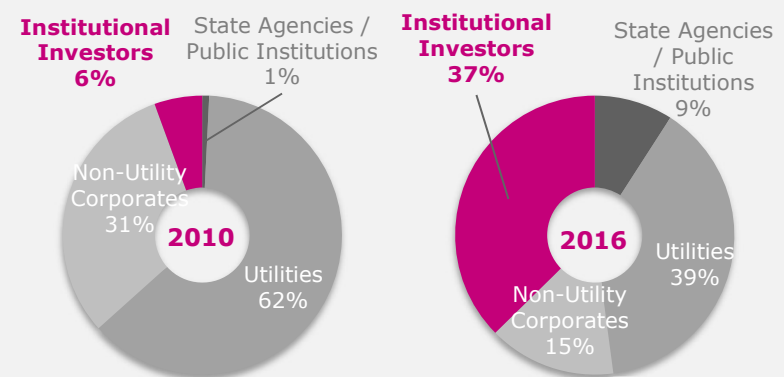
#### ➤ Significant decrease in cost of production due to:

- 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

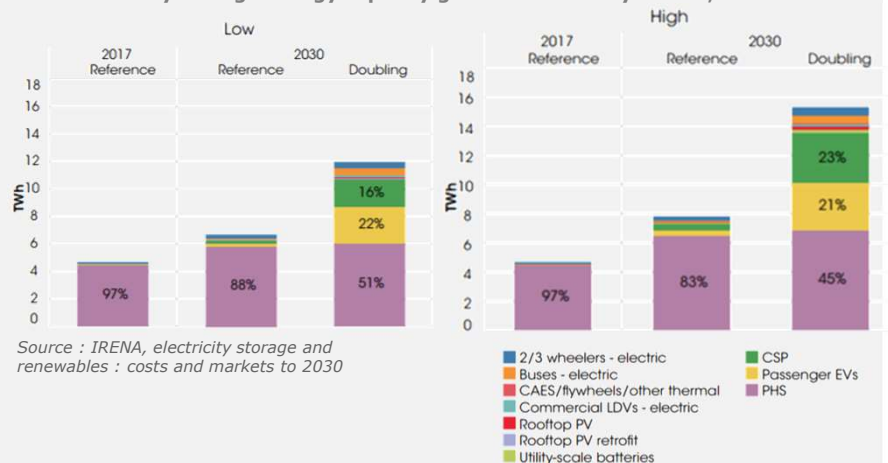
#### Market poised to grow within 5 to 15 years

- ▶ 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)

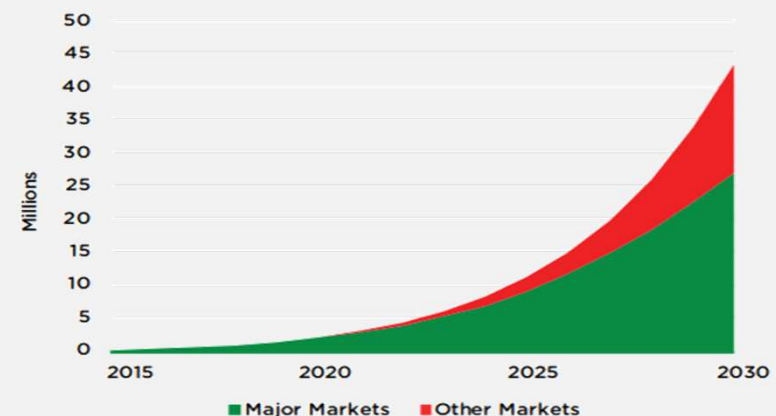
#### EVI\* countries support

- ▶ € 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...

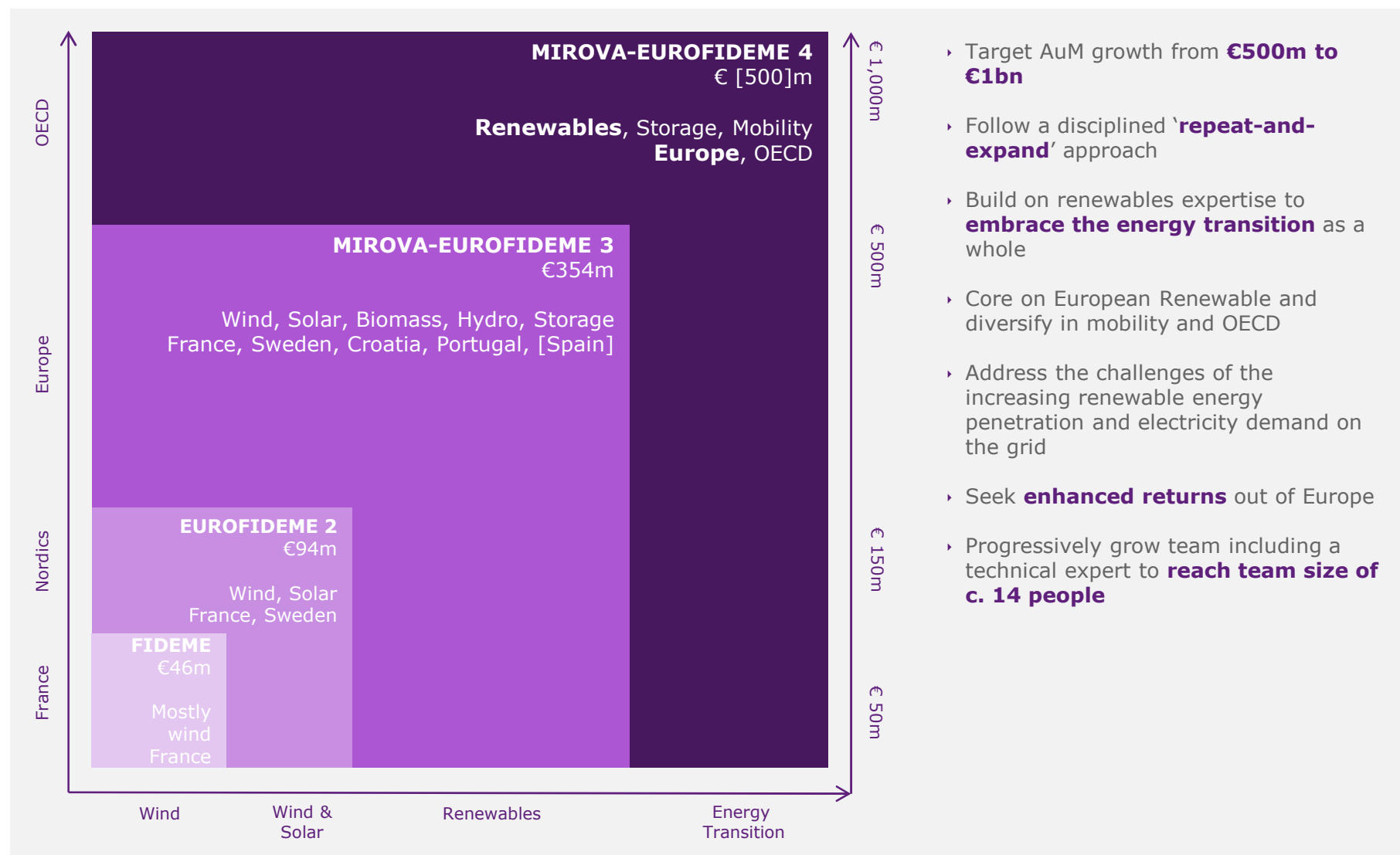
Figure 13: Global annual EV sales to 2030 based on REMap



\*Source Irena

# MEF4 Fund Project in Mirova's Growth Story & Strategy

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





# Disclaimer

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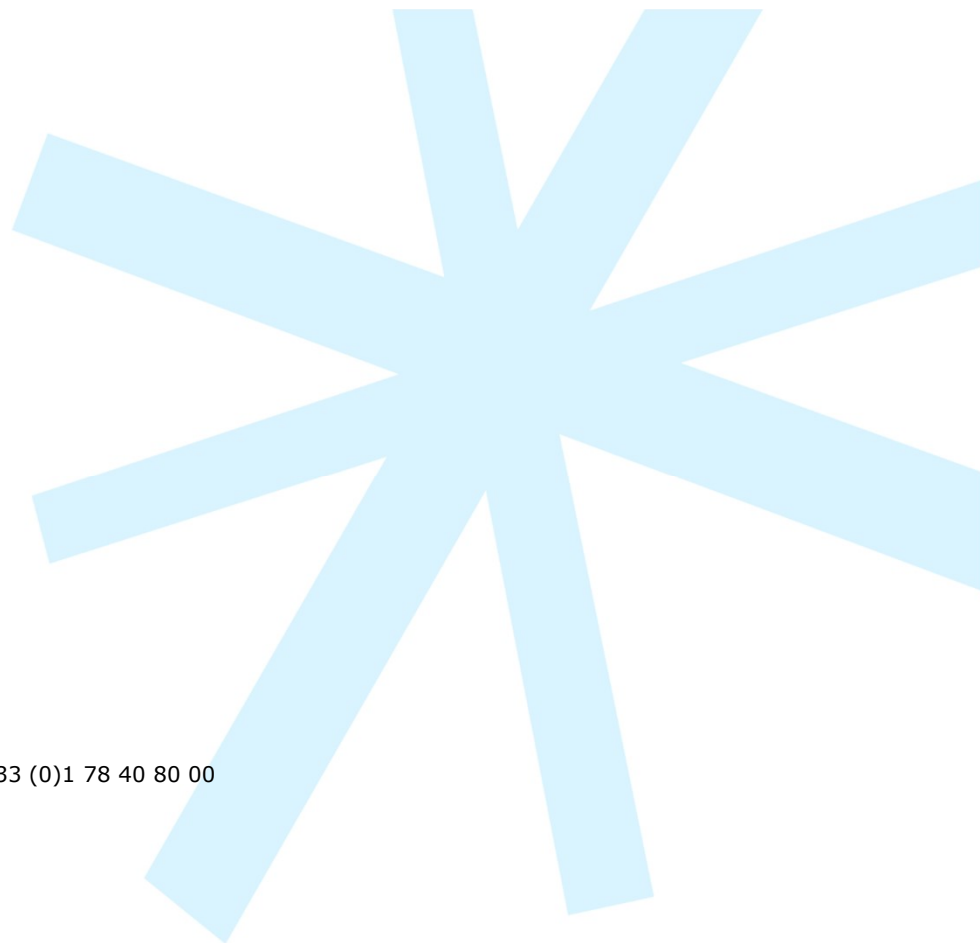
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