

# Renewable Energies in Europe

## Market Overview – Raphael Lance

Roma June 2018



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nor a solicitation to invest in any fund.*

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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



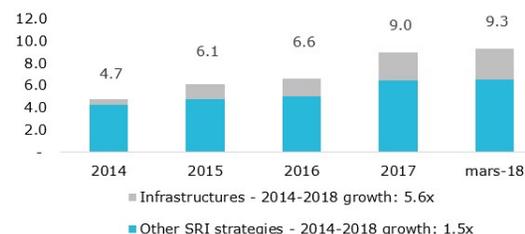
### Credentials/pledges



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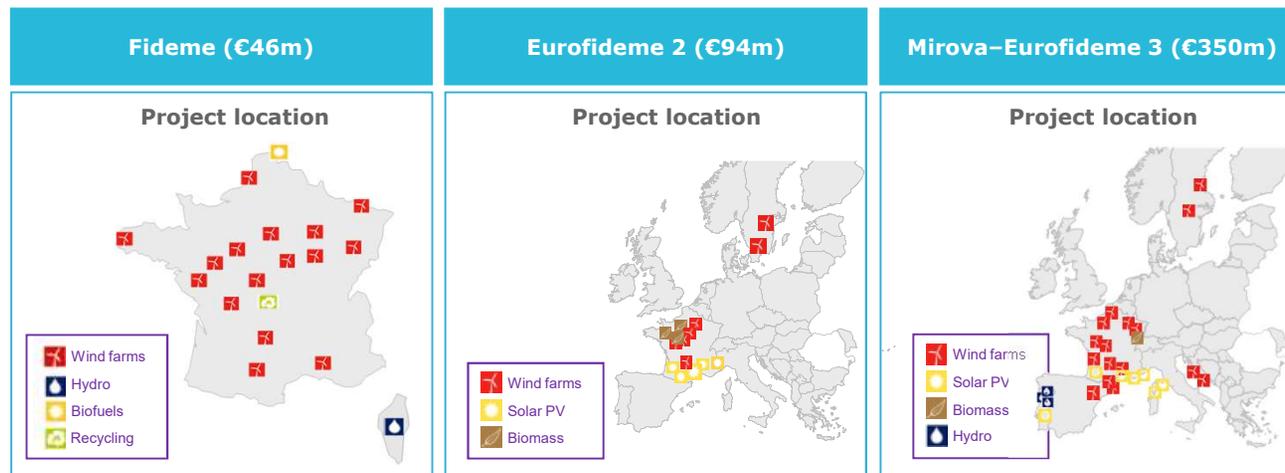
Holmen Varsvik (France) | 51MW | Vestas V112  
Invested by Mirova-Eurofideme 3 in 2014



# Renewable Energy Investment Track Record

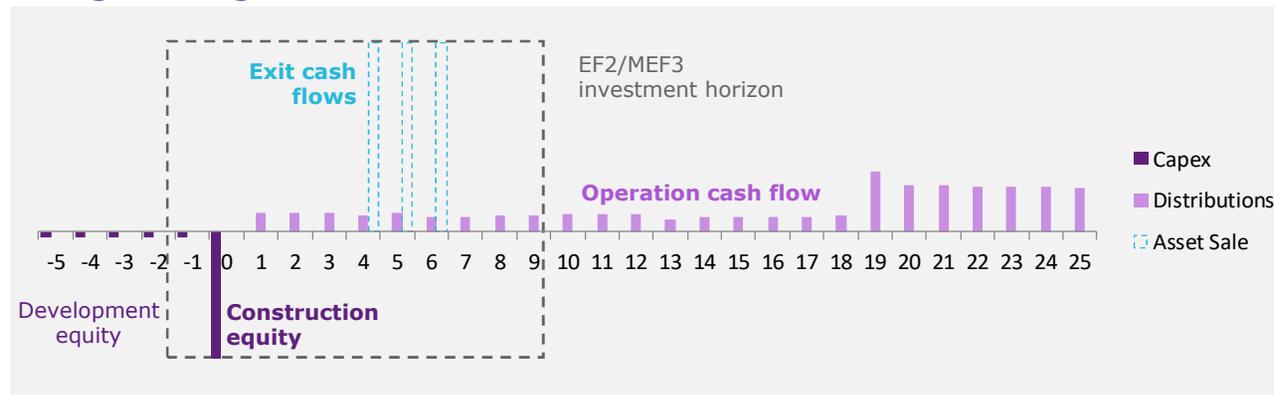
A diversified track record with an impact on the real economy

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

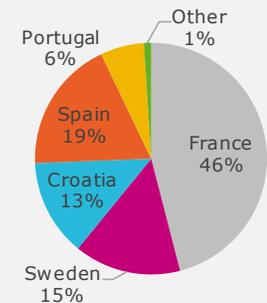
- ▶ Mostly co-investments in equity or subordinated mezzanine to align interest with industrial partners
- ▶ Most of the portfolio acquired at greenfield stage is now operating delivering recurrent cash flow, due to rapid construction

Solar investments of c. €31m

Wind investments of c. €55m



MEF3 by country

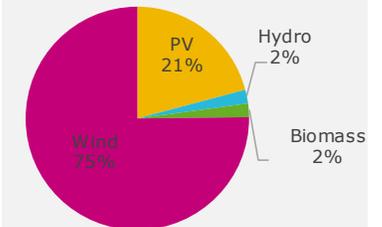


Solar Investments of c. €63m

Hydro / Biomass c. €12m



MEF3 by technology



Wind Investments in France of c. €111m

Wind Investments in Europe c. €142m

# 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*

## 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*

**Strong institutional support**

- ▶ BPCE Group
- ▶ Renewable Associations

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

**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\*

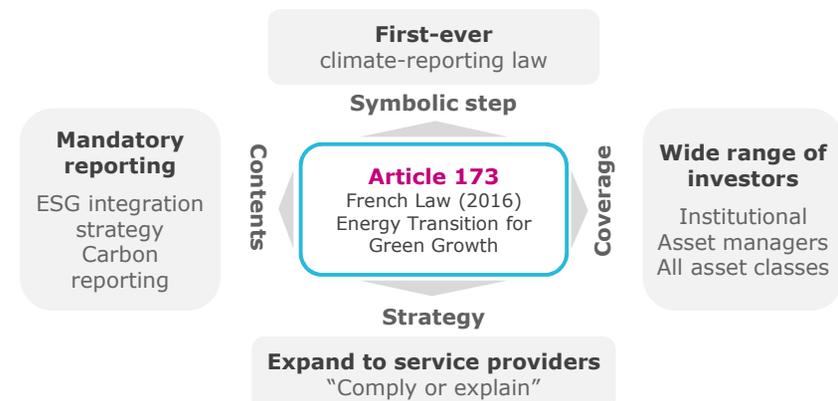
\* Example data (2017) for Mirova Eurofideme 3

### 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 )

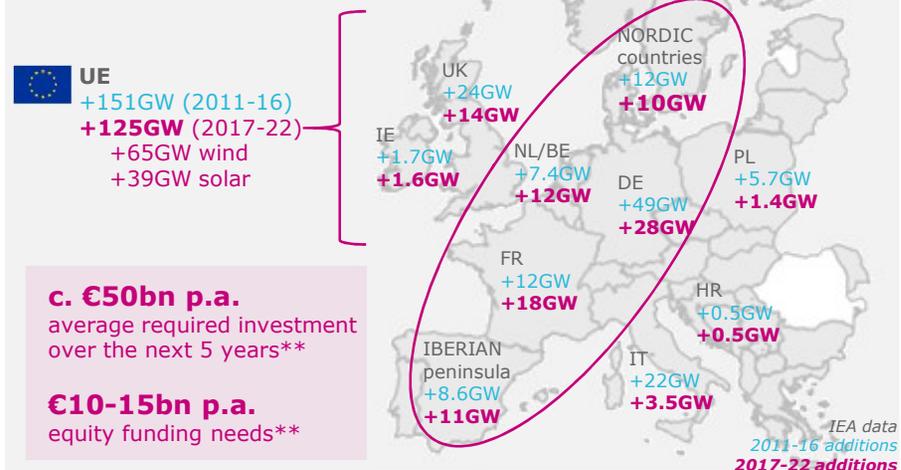
#### ▶ RE: 84% of the new installed electric capacities in the EU in 2017.

- ▶ 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

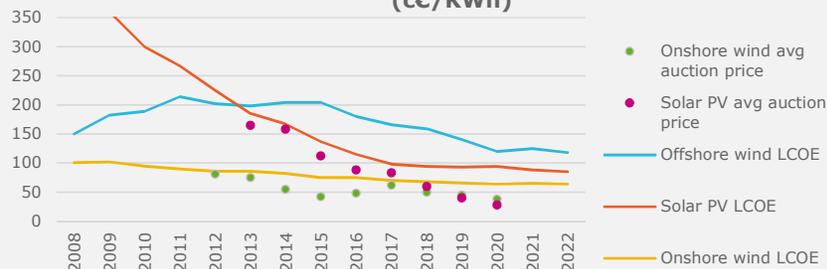


### Everfalling wind and solar production cost

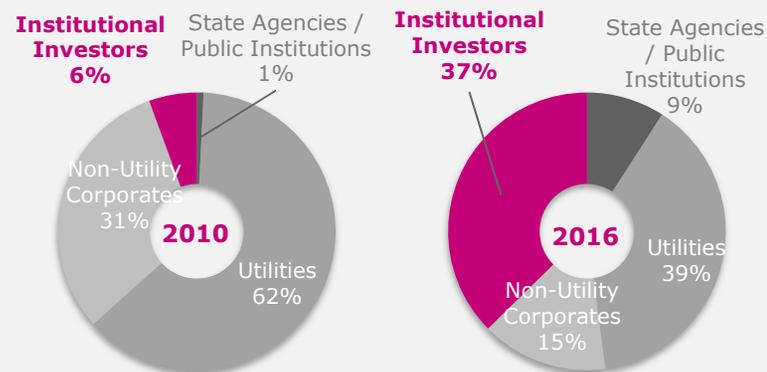
#### ▶ Significant decrease in cost of production due to:

- ▶ 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

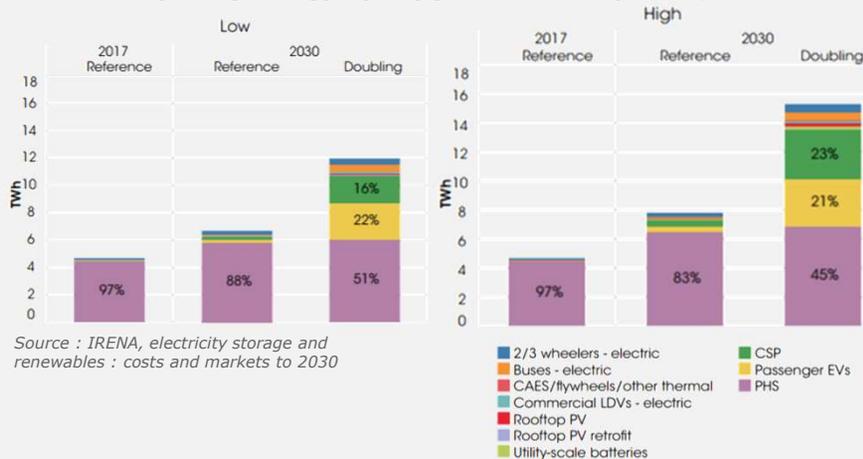
#### Market poised to grow within 5 to 15 years

- ▶ 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)

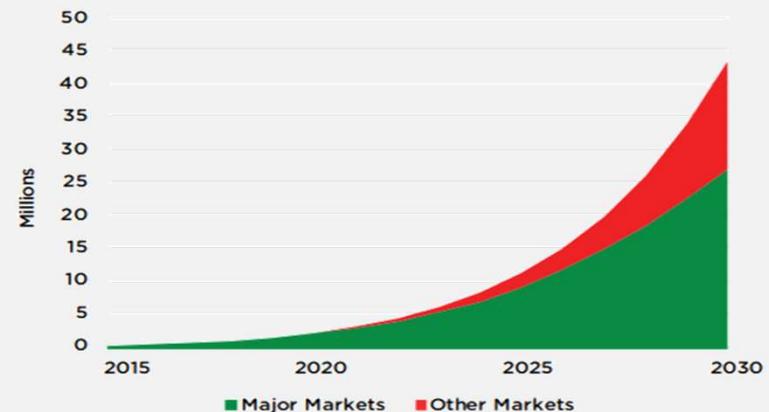
#### EVI\* countries support

- ▶ € 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...

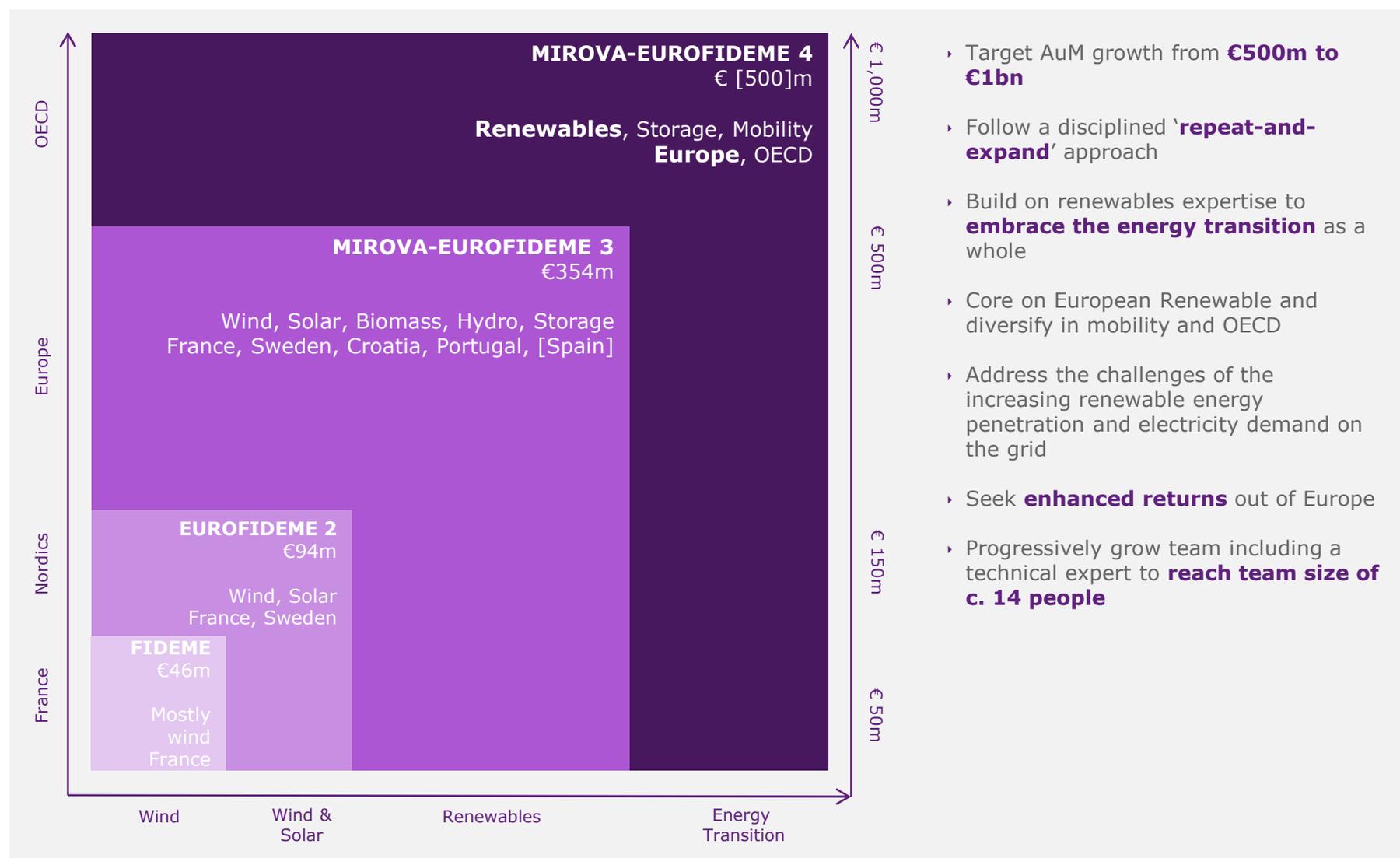
Figure 13: Global annual EV sales to 2030 based on REMap



\*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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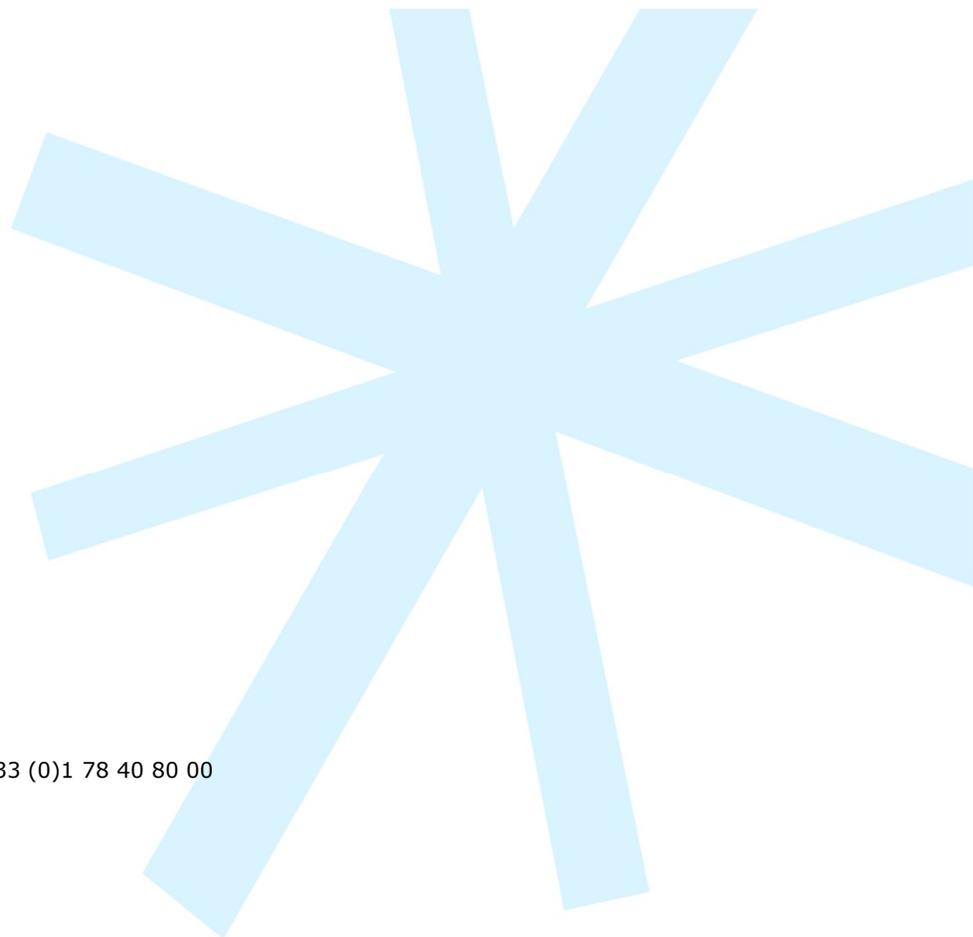
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