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  Follow Mirova on  

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 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

<table>
<thead>
<tr>
<th>Expertise*</th>
<th>Mirova Key features*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed Equities €4.3bn</td>
<td><strong>1984:</strong> Natixis started ESG strategies</td>
</tr>
<tr>
<td>Fixed Income €1.8bn</td>
<td><strong>2002:</strong> First renewable fund (Fideme)</td>
</tr>
<tr>
<td>Natural Capital €100m</td>
<td><strong>72</strong> multi-disciplinary experts at Mirova</td>
</tr>
<tr>
<td>Infrastructure €2.0bn</td>
<td><strong>13</strong> different nationalities</td>
</tr>
<tr>
<td>Impact Investing €161m</td>
<td><strong>2</strong> locations: <strong>Paris and Boston</strong></td>
</tr>
</tbody>
</table>

## Credentials/pledges

- **Global Capital SRI Awards**
  - "Most impressive SRI Investment Firm"
- **EXTEL SRI Connect**
  - "Best Asset Manager contributor to Sustainable Investment"
- **PRinciples for Responsible Investment**

## Mirova Assets Under Management*

<table>
<thead>
<tr>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>Sep-17</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.7</td>
<td>6.1</td>
<td>6.6</td>
<td>8.3</td>
</tr>
</tbody>
</table>

- **Social & Climate infrastructures** 2014-17 growth: 4.1x
- **Other Mirova Strategies** 2014-17 growth: 1.5x

(*) 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)

<table>
<thead>
<tr>
<th>AUM</th>
<th>€46m</th>
<th>€94m</th>
<th>€350m</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATUREITY</td>
<td>13 years</td>
<td>13 years</td>
<td>10 years</td>
</tr>
<tr>
<td>LPs</td>
<td>Institutional investors and public investor Ademe and CDC</td>
<td>Institutional investors (insurance, pension funds, banks, fund of fund)</td>
<td>Institutional investors (EIB, insurance, pension funds, banks, fund of fund, family-offices, foundations)</td>
</tr>
<tr>
<td>STRATEGY</td>
<td>Greenfield, Wind, France</td>
<td>Greenfield, Wind, Solar, France, Nordics</td>
<td>Greenfield, Brownfield, Wind, Solar, Hydro, Biomass, Europe</td>
</tr>
<tr>
<td>STATUS</td>
<td>Fully invested since 2007</td>
<td>Fully invested in 2014</td>
<td>&gt;95% committed</td>
</tr>
<tr>
<td>KPIs</td>
<td>14% gross fund IRR (based on estimated exits)</td>
<td>7-9% gross IRR (estimated)</td>
<td>10-12% gross IRR (estimated)</td>
</tr>
<tr>
<td></td>
<td>1.5x money multiple</td>
<td>End of “J-curve” in 2012</td>
<td>End of “J-curve” in 2015</td>
</tr>
<tr>
<td></td>
<td>6 year payback</td>
<td>Distributions from 2013</td>
<td>Distributions from 2016</td>
</tr>
<tr>
<td></td>
<td>5% average annual cash distribution</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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

- Target AuM growth from €500m to €1bn
- Follow a disciplined ‘repeat-and-expand’ approach
- Build on renewables expertise to embrace the energy transition as a whole
- Core on European Renewable and diversify in mobility and OECD
- Address the challenges of the increasing renewable energy penetration and electricity demand on the grid
- Seek enhanced returns out of Europe
- Progressively grow team including a technical expert to reach team size of c. 14 people

### Target allocation by country

- **France**: 45%
- **Nordics**: 10%
- **Benelux**: 10%
- **Spain**: 10%
- **Other UE**: 10%
- **Other OECD**: 15%
- **Other**: 13%

### Target allocation by technology

- **Wind**: 55%
- **Solar PV & Storage**: 23%
- **Mobility**: 10%
- **Other ENR**: 10%

*Other ENR: among other, hydro, biogaz...
Increasing need for institutional investment

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

<table>
<thead>
<tr>
<th>Year</th>
<th>Onshore wind avg auction price</th>
<th>Solar PV avg auction price</th>
<th>Offshore wind LCOE</th>
<th>Solar PV LCOE</th>
<th>Onshore wind LCOE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>350</td>
<td>200</td>
<td>300</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>2009</td>
<td>300</td>
<td>150</td>
<td>250</td>
<td>250</td>
<td>250</td>
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<tr>
<td>2010</td>
<td>250</td>
<td>100</td>
<td>200</td>
<td>200</td>
<td>200</td>
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<tr>
<td>2011</td>
<td>200</td>
<td>50</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>2012</td>
<td>150</td>
<td>0</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

**Sources:** Renewables 2017 main case forecasts, IEA; Renewable Capacity Statistics 2017, IRENA. Croatia estimate based on UE 2020 target.

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

- **2010**
  - Spill-over
  - Non-Utility Investors 62%
  - Utilities 38%

- **2016**
  - State Agencies / Public Institutions
  - Utility 62%

**Source:** BNEF 2017

**Increasing need for institutional investment**

- **c. €50bn p.a.**
  - Average required investment over the next 5 years

- **C10-15bn p.a.**
  - Equity funding needs

**Decrease in cost of production due to:**

- Technological advancements (conversion efficiency, lifetime, acoustic)
- Competitive pressures (manufacturing overcapacity, severe competition)

**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 EU 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

**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)

**Robust EU growth driven by France, Benelux and Iberia**

- **UE**
  - +151GW (2011-16)
  - +125GW (2017-22)
  - 65GW wind
  - 39GW solar

- **UK**
  - +17GW
  - +1.6GW

- **IE**
  - +17GW
  - +1.6GW

- **NL/BE**
  - +12GW
  - +28GW

- **FR**
  - +12GW
  - +18GW

- **DE**
  - +12GW
  - +28GW

- **HR**
  - +5.7GW
  - +0.5GW

- **PL**
  - +5.7GW
  - +1.4GW

- **IT**
  - +22GW
  - +3.5GW

- **NL/BE**
  - +12GW
  - +10GW

- **IBERIAN peninsula**
  - +8.6GW
  - +11GW

- **NORDIC countries**
  - +12GW
  - +10GW

**State Agen...**
- **2010**
  - Spill-over
  - Non-Utility Investors 62%
  - Utilities 38%

- **2016**
  - State Agencies / Public Institutions
  - Utility 62%

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

**Source:** BNEF 2017

March 2018

This commercial document is intended for professional clients only in accordance with MIFID
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

**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...

---

*Source: IRENA, electricity storage and renewables: costs and markets to 2030

---

*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

<table>
<thead>
<tr>
<th>REPEAT</th>
<th>EXPAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy</td>
<td></td>
</tr>
<tr>
<td>Mature renewable energy</td>
<td>Europe</td>
</tr>
<tr>
<td>Co-investments with industrials</td>
<td>c.C20m tickets in equity and mezzanine</td>
</tr>
<tr>
<td>From late development to start of operation</td>
<td>Leverage partners expansion in OECD</td>
</tr>
<tr>
<td>Electrical mobility</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Execution</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High pace of capital deployment</td>
<td>Dedicated investment team of 9 experts + Mirova resources</td>
</tr>
<tr>
<td>Extensive sourcing capabilities</td>
<td>Proprietary ESG analysis to assess and monitor assets</td>
</tr>
<tr>
<td>Experience of complex transactions</td>
<td>More flexibility on exit with longer hold</td>
</tr>
<tr>
<td>Expand team to cope with Larger investment scope</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attractive vehicle for investors</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reasonable fee structure compared to fund size &amp; complexity</td>
<td>Alignment of interest</td>
</tr>
<tr>
<td>Institutional investors Low SCR</td>
<td>Reduced J-curve</td>
</tr>
<tr>
<td>Co-invest opportunities</td>
<td>Fee discounts based on ticket size</td>
</tr>
<tr>
<td>LP/GP French vehicle</td>
<td></td>
</tr>
</tbody>
</table>
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

2. Construction
- Material supply (turbines, panels, cogeneration system, etc)
- Civil work
- Electrical work
- Development
- Construction management
- Grid connection
- Non recourse Financing

3. Operations (25y)
- Maintenance
- Technical management
- Land Lease
- Insurance
- Administrative
- Decommissioning

Project Company
(Special Purpose Vehicle - SPV)

1. Permitting

Owners
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…

...to profitability on capital employed

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

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

<table>
<thead>
<tr>
<th>Year</th>
<th>Interest Senior</th>
<th>Repayment Senior</th>
<th>Interest Sh Loan</th>
<th>Repayment Sh Loan</th>
<th>Dividends</th>
<th>Cash Flow to shareholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
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<td>2017</td>
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<td>2019</td>
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<td>2021</td>
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<td>2023</td>
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<td>2031</td>
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<td>2037</td>
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<tr>
<td>2039</td>
<td></td>
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</tr>
</tbody>
</table>

### 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

### 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)

### 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

### 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

Targeted Equity IRR

- Transaction Related
- Financial Structure (mezzanine)
- Country risk
- Currency risk
- Electricity prices visibility
- Technology
- Fund Strategy
- Mino/Majo
- Governance
- Inherent complexity (layout, access, portfolio)
- Project Specific
- Output Predictability
- Wind studies
- Counterparty risk and guarantees
- Stage of development
- Governance
- Mino/Majo
- Inherent complexity (layout, access, portfolio)
- Project Specific
- Output Predictability
- Wind studies
- Counterparty risk and guarantees
- Stage of development
Slicing risk/reward to improve return on equity

Funds to finance the initial investment

- **Unlevered Equity IRR 6%**
- **Levered Equity IRR 10%**
- **Senior Debt 3 to 5%**
- **Equity IRR 14%**
- **Mezzanine 9%**

- Senior debt repaid in priority out of the project’s cash flows, lowering the bank’s risk (lower return)
- Strict conditions (DSCR, DSRA, fees, security package)
- No recourse on owner

- Lower return in exchange of lower risk
Vol-V | Bois Cheneau (France) | 10.4MW | Enercon turbines
In Eurofiede 2 Portfolio since 2010
Case study: Wind Project in Sweden
### Decision Matrix

<table>
<thead>
<tr>
<th>Specifications</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Sirocco</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>35 MW</td>
<td>24 MW</td>
<td>11,5 MW</td>
<td>31 MW</td>
<td>62 MW</td>
<td>51 MW</td>
<td>25 MW</td>
<td>200 MW</td>
<td>78 MW</td>
</tr>
<tr>
<td>Developer keeping a share in the project</td>
<td>✔</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✔</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Debt in place?</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
<td>✗</td>
</tr>
<tr>
<td>Turbine tendering done?</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Wake effect from other wind farms?</td>
<td>✗</td>
<td>✔</td>
<td>✗</td>
<td>✗</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Developer staying to manage operations</td>
<td>✗</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✗</td>
<td>✔</td>
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</tr>
<tr>
<td>Operational risk</td>
<td>✗</td>
<td>✔</td>
<td>✔</td>
<td>✗</td>
<td>✗</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
Electricity prices - Sweden - 12 month average - 2000-2013

Source: NordPool

Swedish hydro production (1996-2010)

Source: NordPool

Actual Generation by Technology (145 TWh total)

Source: Redpoint June 2011, figures for full year 2010
An Expertise of Shareholders

Key contracts

Convention de Raccordement

Financing

Turbines

O&M

Electrical work

Civil work

Svevia

VESTAS

Siemens/Vattenfall

EUROFIDEME 2

HOLMEN

LUXCO SA

VATTENFALL

SEB

Legal: DLA

Technical advisor: DNV

Expert on electricity: Poyry

Shareholders

Key contracts
Allocation des free cash flows sur la durée du projet

- Interest Senior
- Repayment Senior
- Interest Sh Loan
- Repayment Sh Loan
- Dividends
- Cash Flow distribué
26/05/2018

AN EXPERTISE OF

NATIXIS

GLOBAL ASSET MANAGEMENT

Responsible Investing

25

C2 - Internal Natixis

Varsvik

Targeted Equity
IRR

Transaction Related

Country Linked

Country risk

Currency risk

Electricity prices visibility

Financial Structure (mezzanine)

Governance Mino/Majo

Inherent complexity (layout, access, portfolio)

Output predictability

Counterparty risk and guarantees

Stage of development

Technology

Fund Strategy

Project Specific

Inherent complexity (layout, access, portfolio)

Output predictability

Counterparty risk and guarantees

Stage of development

Technology

Fund Strategy

Project Specific