

# Renewable Energy: Projecting the Future Market for Northern Europe

As one of the leading advisers in Europe's energy markets, Pöyry produced a report, "The challenges of intermittency in North West European power markets." Used by all market players, it lays a path for beginning the journey toward renewables.

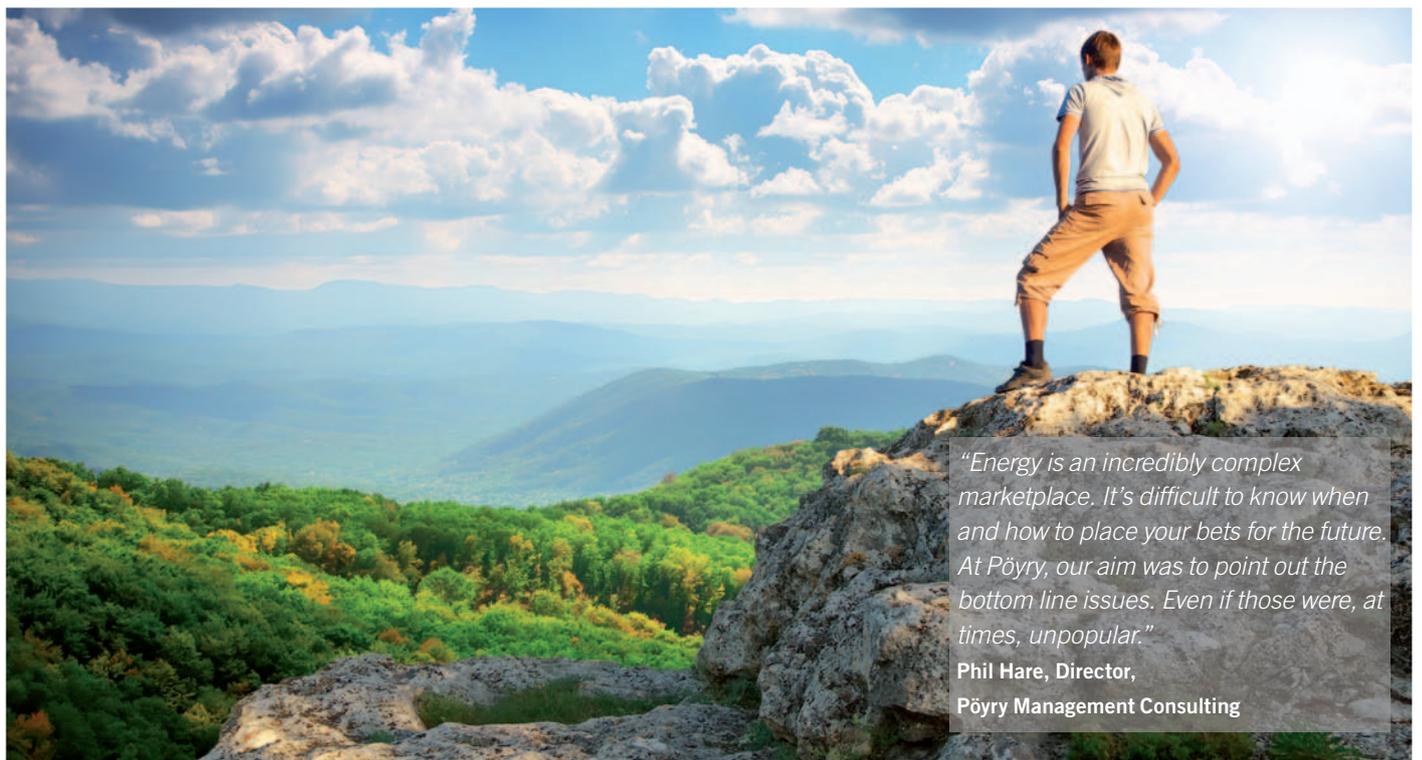
## BACKGROUND

The European Union (EU) is on a mission to reduce its carbon footprint. In 2007 EU leaders set out a plan to get 20% of its energy from renewable sources like wind and solar power. Now the target is getting even tighter with a plan to reduce greenhouse gas emissions in the EU by 40% by 2030. By boosting renewables, the EU also hopes to encourage innovation and create new jobs as well as creating a cleaner, more sustainable energy source.

## CHALLENGE

As everyone knows, there's a problem with relying on wind and sun to generate power. Sometimes the wind doesn't blow and the sun doesn't shine (particularly in Northern Europe). Investors, energy companies and policy makers need robust and detailed market analysis that guides investments. But understanding the risks and rewards of the renewable market can be daunting. It also requires deep analytical skills and knowhow in everything from meteorology to plant

management. Not to mention a keen understanding of institutional investing. Few individual companies can bring together broad business knowhow and combine it with deep industry expertise. Given our extensive track record in energy, Pöyry launched an ambitious effort to capture the risks and rewards in the ground-breaking study, "*The challenges of intermittency in North West European power markets.*"



*"Energy is an incredibly complex marketplace. It's difficult to know when and how to place your bets for the future. At Pöyry, our aim was to point out the bottom line issues. Even if those were, at times, unpopular."*

**Phil Hare, Director,**  
Pöyry Management Consulting

## PROCESS DESCRIPTION

To kick off the research, Pöyry assembled a team of 20 people to develop this unprecedented analysis of the market. This group of experts came from a range of backgrounds: from computer programmers to financial experts to engineers and economists. They worked for three years to develop models for commercializing renewable energy. Among the questions that underpinned the research: what is the likely output from all these renewables, particularly wind and solar? What will the market prices be and how volatile will they be? What are the real commercial prospects for existing plants as well as new renewable projects? What issues should policy makers consider?

Pöyry's approach to investigating the impact of weather on renewables hinged on analysis of seven years' worth of weather pattern data and correlating that with over 100 million wind and solar records. The company used its well-established models of the gas and power markets to evaluate 'intermittency' impacts (times when power is disrupted because of the lack of sun or wind). Using these models and evaluating markets by the hour produced data rigorous enough to reveal the necessary insights for the report.

## WHY PÖYRY

Pöyry Management Consulting is the leading advisor to the world's capital and resource intensive industries. Clients choose us for the sharpness of our insight, deep industry expertise and proven track record.

- Market know-how and distinctive modelling capability provides a profound platform to drive growth, craft the right strategies and make sharp decisions
- Strategic and operational advice is provided by our deep sector expertise across the entire value chain
- We work hand-in-hand with clients to ensure they achieve sustainable success - from strategy creation to implementation roll-out

## RESULTS

As a result of our in depth analysis, Pöyry projected a future view of the intermittency of wind and solar energy sources. One of the definitive conclusions of the research was that even in combination the renewable energy generation will be highly "variable" and the weather won't simply "average out" from place to place. And with prices increasingly driven by weather, market volatility will increase. In contrast the few countries with large supplies of hydro - including the Nordics - had much more stable prices. And the research revealed that unless market designs change, the investment case for thermal power plants is challenging at best. In summary, the report offered an unbiased view of a complex landscape, helping stakeholders make better informed decisions.



## VALUE FOR YOU

As one of the leading advisers in Europe's energy markets, we aim to continue our approach of delivering robust and detailed market analysis that is essential for investors, energy companies and policymakers.



Pöyry is an international consulting and engineering company. We serve clients globally across the energy and industrial sectors and locally in our core markets. We deliver strategic advisory and engineering services, underpinned by strong project implementation capability and expertise. Our focus sectors are power generation, transmission & distribution, forest industry, chemicals & biorefining, mining & metals, transportation and water. Pöyry has an extensive local office network employing about 6,000 experts.



Engineering balanced sustainability™

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