

In the coming years the European and North African economies will need to substantially decarbonise their power generation to address energy challenges and meet climate targets.

This decarbonisation will require a large scale shift to renewable energy for power generation. This leaflet introduces our policy report which proposes a roadmap to deliver a stable and predictable policy landscape to enable this shift.

A successful transition to a renewable power sector will also create significant commercial, social and environmental opportunities for Europe and North Africa. To realize these, the time to act is now.



The policy roadmap report is being developed by:

PRICEWATERHOUSECOOPERS 



THE CLIMATE GROUP

The policy roadmap report will be published in February 2010

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Sustainability & Climate Change

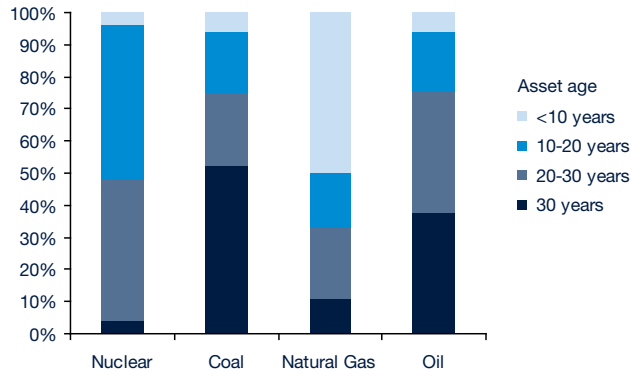
Linking Renewables with a SuperSmart Grid

A Policy Roadmap to 2050

A 100% renewable electricity supply for Europe and North Africa is possible

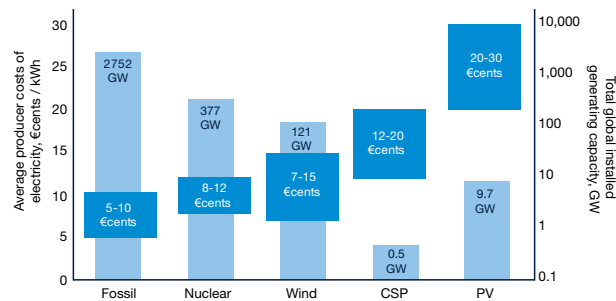
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Aging European power plants present an opportunity to restructure the power sector with renewable technologies.



Source: World Energy Council, 2008

Although replacement costs will be significant, the generation cost of renewable power will decrease substantially as installed capacity increases due to economies of scale and technology developments.



Source: IIASA, 2009

Linking Renewables with a SuperSmart Grid in Europe and North Africa

PricewaterhouseCoopers have collaborated with a number of academics and industry experts to investigate what will be required at a policy level to fully decarbonise the power sector in Europe and North Africa.

This leaflet provides an overview of the method used to develop the policy roadmap and provides details of the key messages that have emerged to date. The final report will be a practical guide for policy makers and the business community to feasibly achieve a 100% renewable electricity supply underpinned by a SuperSmart Grid.

Firstly, we outline the current situation and the “2050 Vision” for the power sector in Europe and North Africa. We address:

- Power supply and fuel mix
- Generation and transmission infrastructure
- Energy and climate policies and targets
- Electricity market structure
- Costs and economics.

Using a gap analysis approach, we have then assessed the transition needed to achieve the vision. The report outlines the key activities and enablers required and it proposes a timeline and milestones for such which take into account the wider context and the geographical scale of the transformation required.

Key messages

- A largely renewable power sector is technically and economically feasible. Achieving this is a political issue.
- Integrating the solar resources of North Africa with the wind resources of Europe is an efficient way to produce cheap and dispatchable renewable electricity for both regions.
- The majority of the changes required to achieve this by 2050 need to be initiated in the next decade. We need to increase the use of existing policy tools to aid the initial growth in renewable generation. These can be phased out overtime as renewables become the cheapest option.
- Proven policy mechanisms to overcome public and political resistance to new power transmission lines do not currently exist and will limit renewable generation. This is the most pressing issue to address when seeking to decarbonise the power system.



We also assess the complex interplay between policy, market structure, infrastructure, economics, environmental and social requirements. This ensures that the roadmap activities are integrated and coordinated. Corresponding issues and constraints are also identified and analysed, the outcome being confirmation that these are not insurmountable. The issues discussed include:

- Managing supply and demand
- Dispatchability
- Reliability and security of supply
- Supply chain shortages
- Geopolitical concerns
- Environmental concerns
- Infrastructure siting.