

## Panel 2.1

## National roadmaps on green development: An industrialised countries perspective

**Chair:** David McLaughlin (NRTEE)  
**Rapporteur:** Isabella Kavafian (NRTEE)  
**Speakers:** Harry Lehmann (UBA)  
 Mark Winskel (UKERC)  
 Igor Bashmakov (CENef)  
 Jean-Charles Hourcade (CIRED) and Frédéric Gherzi (CIRED)

### Major findings

Models are useful but limited constructs of policy outcomes, economies, and societies.

**Harry Lehmann, UBA, Germany**

According to modelling result, Germany can achieve 100% electricity generation by renewable energy.



Based on modelling and examining actual temperature and load patterns, it is possible to demonstrate that feed-in loads are manageable for renewable on a seasonal and peak basis. Modelling impact and scenario presentation of this possibility has different impacts at different times affecting its credibility and salience.

**Mark Winskel, UKERC/Edinburgh Univ., UK**

Decarbonisation and energy security are twin goals of UK strategy. It is technically possible to achieve low-carbon economy. Here, the question is - 'what is best pathway?'

Energy efficiency and conservation are key contributors to low-carbon pathway. Low-carbon and resilience are twin drivers of UK LCS. Low-carbon scenario and resilience scenario are constructed and were shown to be optimal. The important challenge for resilience and low-carbon pathway is the speed of reducing energy demand and decarbonising energy supply.

Seven scenarios considered in UK were comprehensive variants: they included perspectives of technology, society, innovation, industry, international context and environment; each scenario provides lens to consider implications and reactions. Multiple pathways exist to achieve LCS goals.

Systems are interconnected and complex; priority-setting is the job of policy and in which scenarios can assist.

### Igor Bashmakov, CENef, Russian Federation

Russian transition to LCS is difficult; But Russia has successfully decoupled economic growth from emission growth. Issue now will be to maintain new, lower levels rather than seek further reductions; Russia will be able to comply with Kyoto, and low-carbon Russia is not a carbon plateau followed by reductions. From this perspective, the following points are important issues to be considered:

- Energy efficiency, rather than renewable energy, will be the main driver in future Russian efforts;
- Low-carbon Russia scenarios are necessary to achieve economic growth, not the opposite;
- Russia ‘air bag’ potential for global mitigation possibilities;
- Hot summer in 2010 may provoke shift in people’s attitudes and understanding of climate change; and
- Energy price per unit of GDP has proved to be a key determinant of impact and growth.

### Jean-Charles Hourcade and Frédéric Gherzi, CIRED, France

In France, carbon pricing has been a key modelling and scenario development objective over the past two years. The focus was placed on the type of recycling of the tax revenues and on the redistributive impacts of various policy packages, including impacts on households and industry.

How to address short-term versus the long term is another major issue to consider. For example, if the carbon price is high in the short term it triggers innovation and costs are low in the long-term; but the burden is high for current generations which makes this policy hardly acceptable. Actually there is a need for diversifying policy tools beyond carbon price. There needs to be short-term (Keynesian) and long-run (Neo-classical) integration. There is also a need to address the balance of equity and efficiency issues.

No regrets is not no pain, so decision-makers need to explain costs; high cost now is a means of reducing costs later, and can lead to benefits, for example, of energy security and employment. Therefore, one cannot and should not hide the upfront costs of the transition.

Other important messages include;

- Transportation infrastructure offers possibilities for low carbon investment
- We need to be careful about comparing carbon pricing impacts across companies and sectors – these impacts will be different.
- There are many possible positive measures for LCS outcomes but they are insufficiently researched or modelled to determine efficacy and utility. Models use best possible worlds as outcomes

## Main issues discussed

- Evidence-based decision making requires greater linkage with political economy and needs and roles of decision-makers (on behalf of all society) in making trade-offs, setting priorities, and taking decisions
- There is a need to focus on range of policy tools, not just explicit carbon pricing (i.e. transportation)
- Explanation of trade-offs rather than simply presenting scenarios (‘no regrets is not no pain’) may be more fruitful in explaining to society
- Political correctness of impacts and trade-offs needs to be replaced by more direct explanation of trade-offs to society
- Role of uncertainty in modelling and scenario development and presentation
- Comprehensive policy approach involving binding targets, efficient energy use, legal and economic

frameworks, spatial planning

- Social support for LCS transition

## Items for Future Research

- Energy demand v.s. energy supply as contributor to ultimate decarbonisation of economies
- Best practices in scenarios development and presentation for decision-makers
- Carbon pricing – differential pricing v.s. revenue recycling
- Carbon value trajectories – micro financing impacts
- Integrated policy frameworks (supply/demand)
- Low-carbon resilience – combining decarbonisation with system resilience criteria
- Scenarios and transition pathways development to assist policy makers
- Next steps (terra incognita) to move beyond initial actions
- Capture the spill-over effect on growth and employment of a transfer of final demand from energy intensive industry to low energy intensive ones (with higher labour intensity and lower import content)
- Coupling energy models, land-use models, urban models in a consistent macroeconomic framework
- Constructing comprehensive databases of the cost structures of alternative low-carbon technologies
- Progress on the modelling of labour markets in a shifting world with migrations and informal economies
- Modelling the formation of 'scarcity rents' and their reallocation: fossil fuels, land, real estate

## Policy Relevant Questions

- How can policy scenarios be made more relevant and useful to decision-makers?
- What short-term v.s. long-term scenarios would be most useful and comparable that would tie-in more directly with decision-makers' time frames?
- What viable scenarios maximise positive impacts of energy efficiency as a comparable source of emission reduction across all countries and scenarios?
- How can uncertainty in outcomes, inputs, and responses be communicated to policy makers in a way that still allows for action?
- What are the limits to scenarios for presenting policy approaches and priority-setting for policy makers?