

international co-operation and transfer of nuclear knowledge will be necessary. These countries were widely represented at the conference and made requests to this effect.

### Closing remark

Whilst the issues discussed over the two days will already

be familiar to regular readers of *NEA News*, the level of participation at the conference – in terms of both the number of countries that participated and the senior level of representation of nearly all the delegations present – is unique, and augers well for continued international dialogue on the risks and benefits of nuclear energy. ■

### Note

1. Presentations given at the conference are available online at [www.parisnuclear2005.org](http://www.parisnuclear2005.org).

*This news brief was prepared by Andrew Macintyre, NEA Central Secretariat.*

## Projected costs of generating electricity

The NEA and the International Energy Agency (IEA) have recently published their sixth report in a series of studies on projected costs of electricity generation. This latest study was conducted by a group of experts from nineteen member countries and two international organisations, the International Atomic Energy Agency (IAEA) and the European Commission (EC). The latter provided input data from three non-OECD countries. The overall objective of the study was to provide reliable information on key factors affecting the economics of electricity generation using a range of technologies. The report can serve as a resource for policy makers and industry professionals seeking to better understand generation costs of these technologies.

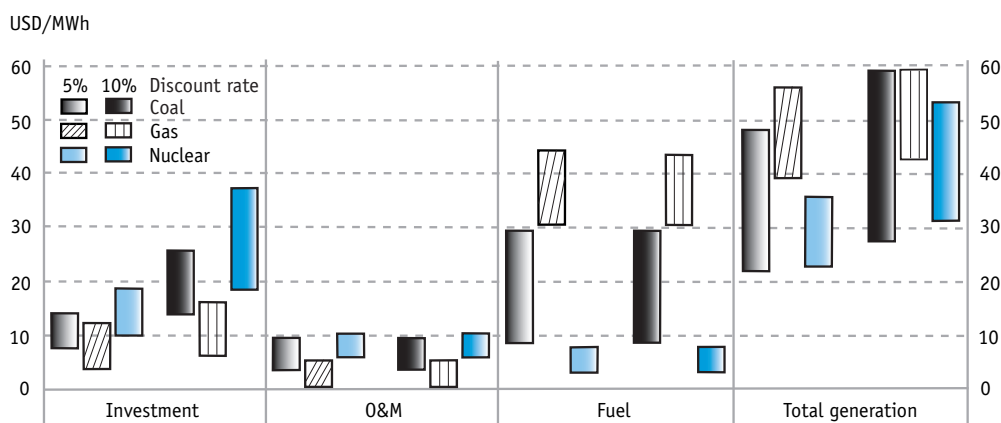
The report presents and analyses projected costs of generating electricity calculated with input data provided by participating experts and generic assumptions adopted by the group of experts. The

levelised lifetime cost methodology was applied by the joint IEA/NEA Secretariat to estimate generation costs for more than a hundred plants relying on various fuels and technologies, including coal-fired, gas-fired, nuclear, hydro, solar and wind power plants; cost estimates are also provided for combined heat and power plants using coal, gas and combustible renewables. The plants included in the study rely on technologies available today and considered by participating countries as candidates for commissioning by 2010-2015 or earlier. Generic assumptions for the main technical and economic parameters included an economic lifetime of 40 years for most plants, an average load factor for base-load plants of 85% and discount rates of 5% and 10%. The appendices to the report address a number of issues such as generation technology, methodology to incorporate risks in cost estimates, impacts of integrating wind power into electricity grids and effect of carbon emission trading on generation costs.

Electricity generation costs calculated are bus bar costs, at the station, and do not include transmission and distribution costs. The costs associated with residual emissions – including greenhouse gases – are not included in the costs provided because they are not yet borne by electricity producers, and therefore, are not reflected in the generation costs calculated in the study.

The cost estimates do not substitute for detailed economic evaluations required by investors and utilities at the stage of project decision and implementation, which should be based on project-specific assumptions using a framework adapted to local conditions and a methodology adapted to the particular context of the investors and other stakeholders. Moreover, the reform of electricity markets has changed decision making in the power sector and led investors to take into account the financial risks associated with alternative options as well as their economic performance. In view of the risks they are facing in

## Range of levelised costs for coal, gas and nuclear power plants



competitive markets, in the absence of other considerations investors tend to favour less capital-intensive technologies. The methodology adopted for calculating generation costs in this study did not specifically seek to take business risks in competitive markets into account.

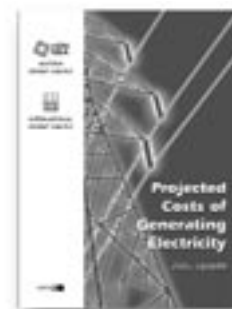
The nature of risks affecting investment decisions has changed significantly with the liberalisation of electricity markets, and this has implications for determining the required rate of return on generating investments. Financial risks are perceived and assessed differently. The markets for natural gas are undergoing substantial changes on many levels. Environmental policy is also playing an increasingly important role that is likely to influence fossil fuel prices significantly in the future. Security of energy sup-

ply remains a concern for most OECD countries and may be reflected in government policies affecting generating investment in the future.

Given the above considerations, the study finds that the lowest levelised costs of generating electricity from the traditional main generation technologies are within the range of 25-45 USD/MWh in most countries. The levelised costs and the ranking of technologies in each country are sensitive to the discount rate and the projected prices of natural gas and coal.

The study provides insights on the relative costs of generating technologies in the participating countries. Within the study's framework and limitations, it suggests that none of the traditional electricity generating technologies can be expected to be the cheapest

in all situations. The preferred generating technology will depend on the specific circumstances of each project. The study indeed supports that on a global scale there is room and opportunity for all efficient generating technologies. ■



*Projected Costs of Generating Electricity: 2005 Update* (ISBN 92-64-00826-8) can be purchased online at [www.oecd.org/bookshop](http://www.oecd.org/bookshop).

### Erratum

In Issue 22.2 of *NEA News*, the table on NEA joint projects contained two errors in the budget figures. The budget of the Halden Reactor Project should have read US\$ 45 million, and that of the International Common-cause Data Exchange (ICDE) Project US\$ 150 000/year.