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THE OUTLOOK FOR NUCLEAR ENERGY

With the launch today of its first *Nuclear Energy Outlook*, the OECD Nuclear Energy Agency (NEA) makes an important contribution to ongoing discussions of nuclear energy's potential role in the energy mixes of its member countries. As world energy demand continues to grow unabated, many countries face serious concerns about the security of energy supplies, rising energy prices and climate change stemming from fossil fuel consumption.

In his presentation, the NEA Director-General Luis Echávarri is emphasising the role that nuclear power could play in delivering cost-competitive and stable supplies of energy, while also helping to reduce greenhouse gas emissions. In one *Outlook* scenario, existing nuclear power technologies could provide almost four times the current supply of nuclear-generated electricity by 2050. Under this scenario, 1400 reactors of the size commonly in use today would be in operation by 2050. But in order to accomplish such an expansion, securing political and societal support for the choice of nuclear energy is vital. An ongoing relationship between policy makers, the nuclear industry and society to develop knowledge building and public involvement will become increasingly important, the publication notes. Moreover, governments have a clear responsibility to maintain continued effective safety regulation, advance efforts to develop radioactive waste disposal solutions and uphold and reinforce the international non-proliferation regime.

The authors find that the security of energy from nuclear power is more reliable than that for oil or gas. Additionally, uranium's high energy density means that transport is less vulnerable to disruption, and storing a large energy reserve is easier than for fossil fuels. One tonne of uranium produces the same energy as 10 000 to 16 000 tonnes of oil using current technology. Ongoing technological developments are likely to improve that performance even more.

Until the middle of the century the dominant reactor type in use is likely to be "Generation III+" light water reactors, the name referring to their further improved safety characteristics and economic performance in comparison with existing designs. By 2030, Generation IV energy system concepts offering competitively priced and reliable operations with minimised waste production, as well as opening up opportunities to produce hydrogen fuel for the transport sector, are expected to be commercially available.

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NEA membership consists of 28 OECD countries. The mission of the NEA is to assist its member countries in maintaining and further developing, through international co-operation, the scientific, technological and legal bases required for a safe, environmentally friendly and economical use of nuclear energy for peaceful purposes. The NEA also provides authoritative assessments and forges common understandings on key issues, as input to government decisions on nuclear energy policy and to broader OECD policy analyses in areas such as energy and sustainable development. The information, data and analyses it provides draw on one of the best international networks of technical experts.