

For immediate reporting

SINGAPORE GOVERNMENT MUST CONTINUE TO PLAN FOR AND LEAD THE ENERGY TRANSITION

1. The 8th International Advisory Panel (IAP) on Energy was held from 26 to 27 October 2023, in conjunction with the Singapore International Energy Week. The IAP discussions were chaired by Second Minister for Trade and Industry Dr Tan See Leng. The IAP, which comprises international energy experts, was set up by the Ministry of Trade and Industry in 2008 to provide insights on developments in the global energy arena, and to advise Singapore on our strategies for the energy sector.

2. The IAP noted that the crisis management measures introduced, and guardrails implemented over the past two years have stabilised Singapore's energy market. The IAP also observed that the government's move to centralise gas procurement was appropriate, since natural gas will remain an important part of Singapore's energy mix for the foreseeable future. These measures will give Singapore a firm foundation to press on with its decarbonisation plans.

Role of government

3. The IAP highlighted that the energy transition is a complex process with significant uncertainties. Singapore is further challenged by its limited options to deploy renewable energy at scale. To make progress, net-zero targets and decarbonisation plans must be championed by political leaders and effectively implemented by policymakers.

4. The IAP commended the government for its thoughtful and far-sighted approach in preparing for Singapore's energy transition. It encouraged the government to continue playing a leading role in (i) determining the optimal national energy mix; (ii) setting the guideposts, timelines and pathways for getting to net-zero; (iii) planning for the infrastructure and manpower needed for deploying low-carbon technologies; and (iv) managing the costs of the transition.

Role of markets

5. The IAP recognised that efficient markets foster healthy competition and innovation by the private sector. The energy transition will change Singapore's power sector from one with homogenous generation sources to one where different generation sources (e.g. natural gas, solar, wind, hydropower) compete alongside one another, each with their own cost structures, operating models, and supply profiles.

6. With this diversity, the IAP advised that investors would require greater visibility and certainty that their investments would be able to generate sufficient financial returns.

7. **The IAP therefore recommended that the government consider market mechanisms that would (i) buttress investor confidence through de-risking; while (ii) retaining incentives for private sector innovation and competition.** This would help ensure that Singapore's energy market remains dynamic, efficient, and reliable.

Study all viable pathways to decarbonise

8. **The IAP agreed with the approach to proactively study all viable decarbonisation pathways** that might be suitable in Singapore's context, including regional energy imports, domestic solar deployment, and hydrogen. The IAP also supported Singapore's approach of embarking on small-scale pathfinders to validate the feasibility of newer low-carbon technologies, as well as to obtain greater certainty on deployment and operating costs.

9. **The IAP recommended that Singapore press on with its ongoing efforts to build up capabilities to understand advanced nuclear technologies such as Small Modular Reactors, while noting that Singapore has not made any decision to deploy nuclear energy.** The IAP highlighted that nuclear energy had the potential to provide a secure and low-carbon baseload supply of energy for Singapore's needs.

10. The IAP also advised that Singapore continues to monitor developments in advanced geothermal systems, fusion energy, and biofuels. Lastly, the IAP recommended that Singapore develop a robust R&D portfolio of low-carbon energy technology projects with local and international partners, with a focus on improving the commercial viability of energy solutions that could be deployed in Singapore.

11. MTI and EMA will study the recommendations from the IAP members and incorporate them as part of our energy transition strategy.

**MINISTRY OF TRADE AND INDUSTRY
27 OCTOBER 2023**

**Annex A: List of International Advisory Panel on Energy Members
Annex B: About the International Advisory Panel on Energy**

Annex A

List of International Advisory Panel on Energy Members

Name	Designation
Chairman	
Dr Tan See Leng	Minister for Manpower and Second Minister for Trade and Industry
Members	
Dr Dan Arvizu	Former Chancellor, New Mexico State University; Member of President's Council of Advisors on Science and Technology
Mr Peter J Coleman	Former Chief Executive Officer and Managing Director, Woodside Petroleum; Independent Director of Schlumberger; Chair of Infinite Green Energy, H2EX and DIRECT Infrastructure
Mr David Gray	Chairman, Mutual Energy and the Energy Innovation Centre (EIC); Non-Executive Director of Tokamak Energy
Dr Robert Judd	Secretary General of the European Gas Research Group; Technical Director for Hydrogen, DNV APAC
Dr John E. Kelly *	Independent Consultant; Former Chief Technology Officer in the Office of Nuclear Energy in U.S. Department of Energy; Former President for American Nuclear Society
Dr Arunava Majumdar *	Dean, Doerr School of Sustainability; Jay Precourt Professor, Department of Mechanical Engineering, Stanford University
Mr Benoît Potier	Chairman of the Board of Directors of Air Liquide SA

Prof Alberto Sangiovanni Vincentelli	The Edgar L. and Harold H. Buttner Chair, Department of Electrical Engineering and Computer Sciences, University of California at Berkeley
Mr Sumant Sinha	Founder, Chairman and CEO, ReNew Power
Mr Maikel van Verseveld	Vice President, Energy Service Line Lead, Microsoft Industry Solutions; Former Managing Director, Accenture
Dr Robert B. Weisenmiller	Research Affiliate, California-China Climate Institute; Former Chair, California Energy Commission

Absent with Apologies

Name	Designation
Mr Mohamed Jameel Al Ramahi	Chief Executive Officer, Masdar
Ms Maria van der Hoeven	Senior Fellow, Clingendael International Energy Programme
Mr Jon Wellinghoff	Chief Executive Officer, Grid Policy Inc
Dr Daniel Yergin	S&P Global Vice Chairman; Chairman of S&P Global's CERAWEEK conference

**Virtual Participant*

Annex B

About the International Advisory Panel on Energy

1. The International Advisory Panel (IAP) was set up by the Ministry of Trade and Industry (MTI) to provide insights and perspectives on emerging trends in the global energy arena, and to advise on the strategic directions for the energy sector in Singapore. This will enable us to be prepared to meet the challenges and leverage on the opportunities that are emerging in the global energy landscape.
2. The panel comprises a group of top energy executives and thought leaders from around the world. Dr Tan See Leng, Minister for Manpower and Second Minister for Trade and Industry, chairs the IAP.
3. The IAP meetings are held biennially and the IAP's recommendations have informed our national energy policy.
4. The previous meeting of the IAP in 2021 discussed investments in technology and international collaborations.