Image: iStock

India's Vision Towards a Net-Zero Economy:

Stakeholder Perspectives

Ankur Malyan
Pallavi Das
Puneet Kamboj
Sweta Jha
Ujjawal
Vaibhav Chaturvedi

February 2022 | Report

Contents

Image: iStock

About the survey

While India invests to facilitate the transition to a low-carbon economy, a number of questions remain unanswered - When should India peak its emissions? When would India phase out coal from the economy? CEEW undertook a stakeholder outlook survey during July-August 2021, to capture the outlook of energy, climate and environmental professionals on some of the important aspects of India's decarbonisation debate.

The survey questionnaire was shared with professionals in the CEEW network, through individual emails and social media platforms. The absence of a unique list of energy/climate/environment sector professionals (sampling frame) rendered random sampling impossible, and hence, a convenience sample had to be drawn. As a result, the outcomes of this survey are not amenable to statistical inference. The results collate views of professionals across 150+ institutions, implying that the insights represent the view of a broad spectrum of energy, climate and environmental stakeholders, which was the motivation behind this survey.

We define 'professionals' as stakeholders exposed to and engaging with the debate related to various aspects of India's energy and climate policy discourse. Exposure to and engagement with the debate is our core criteria for defining professionals, rather than years of experience within the domain. We believe that the diversity of respondents and views captured in our survey represents the reality of broad expert perception that cannot be measured by a narrow metric of expertise defined by age or experience or any other metric of academic scholarship pertaining to journal publications. A wide range of professionals from the government, bilateral and multilateral institutions, think tanks or research institutions, financial institutions, industry, etc. were covered in the survey.

The key objectives of the survey were:

- To capture the perspective of the sector professionals towards India's low carbon vision
- To understand the economy/sector/technology outlook of stakeholders to inform the decarbonisation debate in India

NOTE:

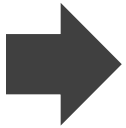
1. ***The responses to the survey are kept anonymous and the results are presented in aggregate form. Also, it is recommended to not generalise the results or regard them as the perception of the whole nation.***
2. ***It is to be noted that this survey was conducted before Conference of Parties -26th Edition (COP26), when India rolled out its net-zero target. Change in perception could be expected among stakeholders, due to announcement of India's latest commitments.***

1 Stakeholders surveyed

Image: iStock

Stakeholder categories

250+ professionals from **150+** institutions



Think tank / research institution **29%**

Academia **24%**

Industry **20%**

Government ministries & departments **09%**

Bilateral and multilateral institution **05%**

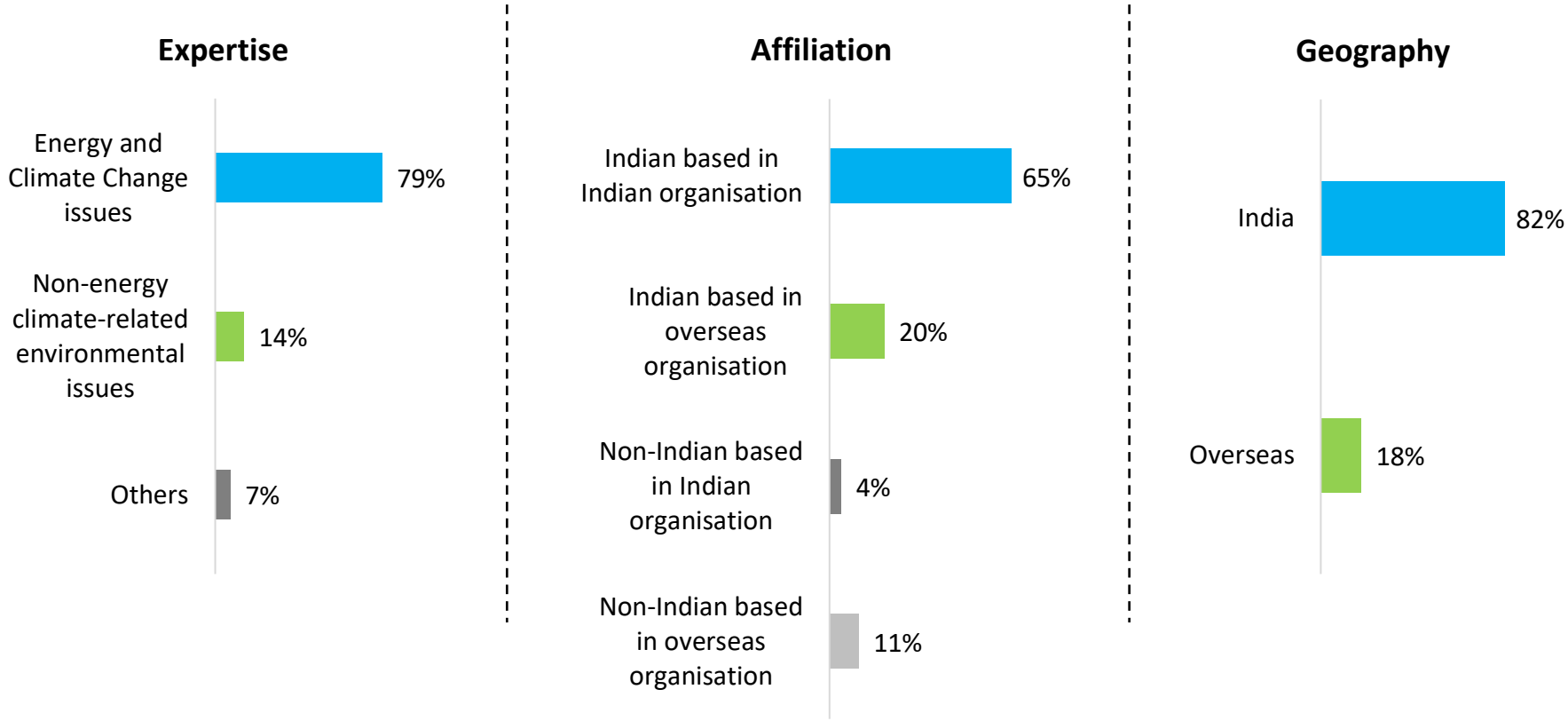
Financial institution **04%**

Philanthropic foundations **04%**

Others **06%**

Source: Author's analysis

Stakeholder expertise and affiliations



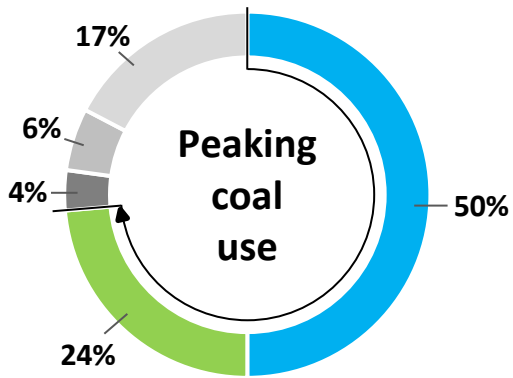
Source: Author's analysis

2 Survey findings

Image: iStock

Could India become a coal-free nation?

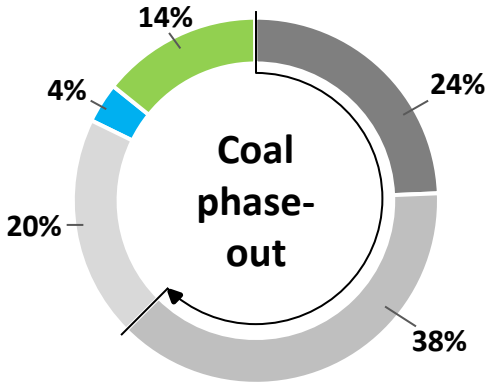
By when would India peak in its coal use?



Nearly two-thirds of the respondents are in consensus that coal use would peak in India by 2040.

- 2030
- 2040
- 2050
- 2060 and beyond
- Don't know/Not sure

By when would India be able to phase out* coal use?



A majority of the respondents believe that India would phase out coal by 2050 or beyond.

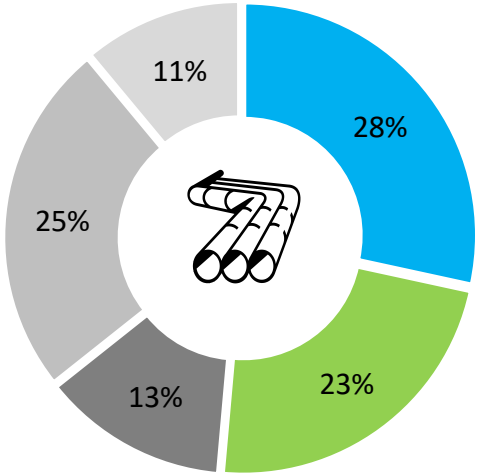
Did you know?

In 2019–20, India consumed ~956 million tonnes of coal, catering to more than half of the primary energy needs of the country.

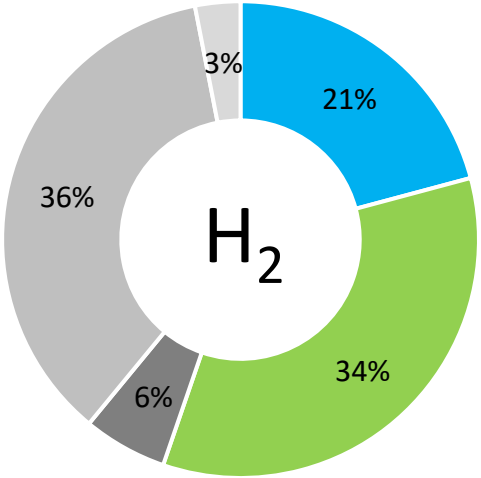
Source: Author's analysis | Note: *In COP26, India committed for phase down of coal not phase out. The question asked was specific to phase out.

Could alternative fuels enable low-carbon transition across sectors?

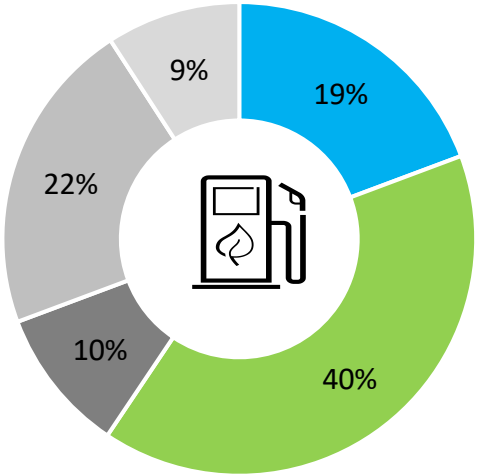
Natural Gas



Hydrogen



Biofuels



Did you know?

In India, transport, power and building are priority sectors for cheaper gas allocation.

India recently launched the 'National Hydrogen Mission' to promote hydrogen for decarbonisation.

India has a dedicated target and policy to support biofuel blending in petrol and diesel.

Power Sector

Transport sector

Building sector

Industry sector

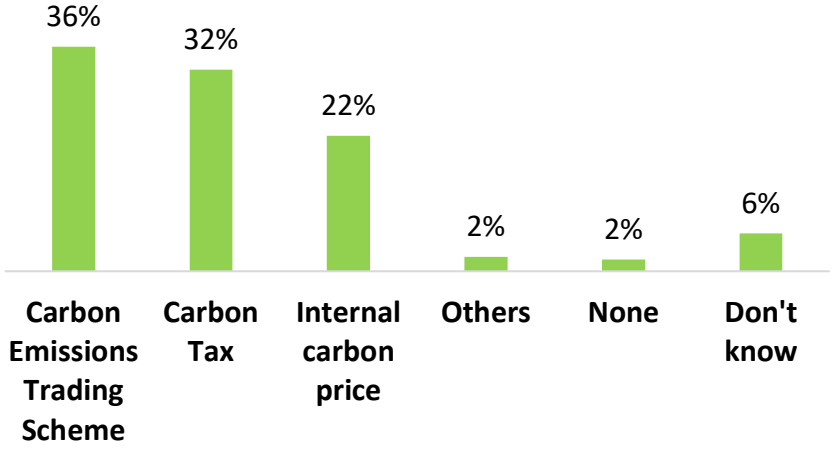
Not of use

Source: Author's analysis

Could mitigation instruments and technologies be part of India's plan?

More than 80% respondents believe that India needs explicit carbon pricing to regulate emissions.

Mitigation instruments likely to be adopted in India:

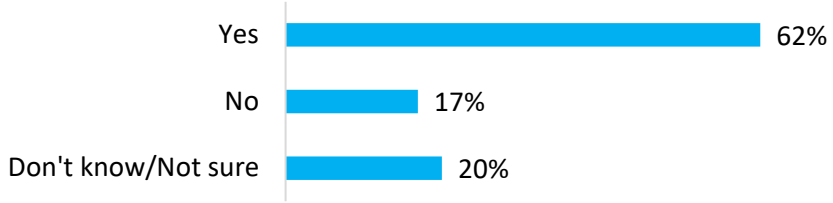


Did you know?

India piloted the Emissions Trading Scheme (ETS) in Surat, Gujarat, which seems to be a success in battling emissions from industrial units.

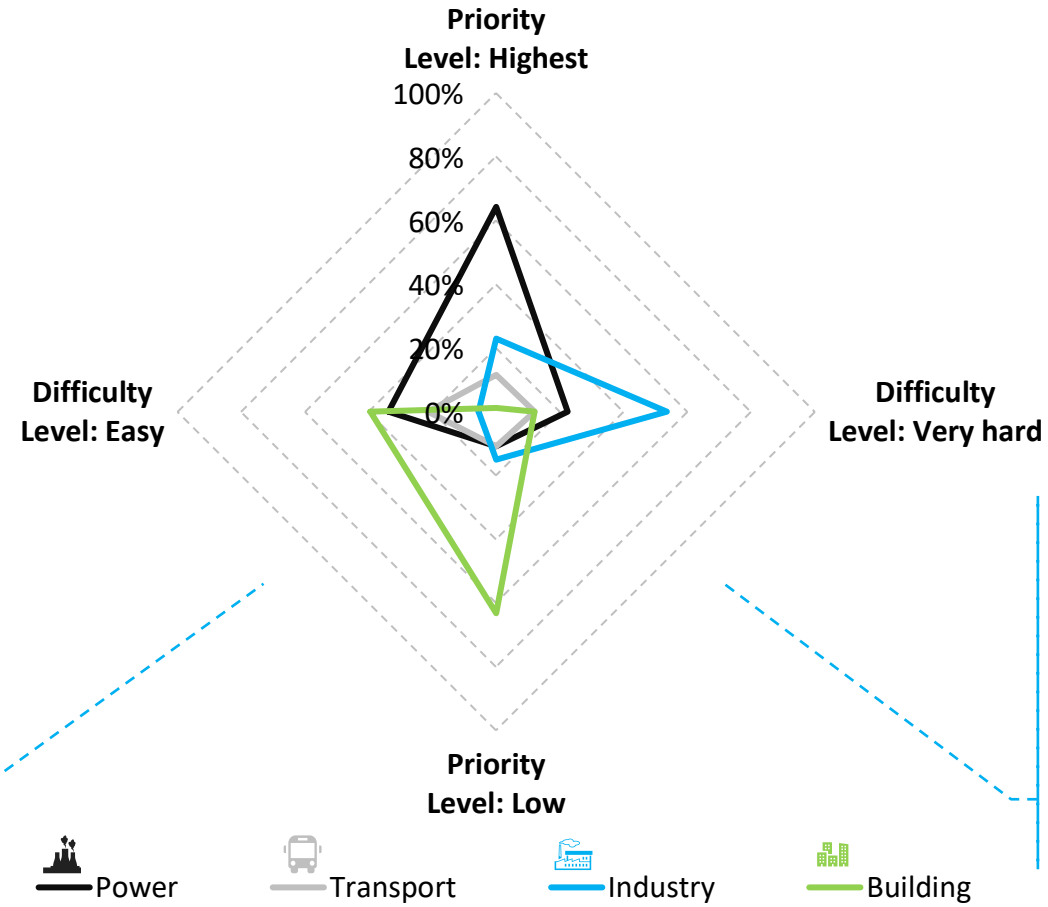
Source: Author's analysis

More than 60% respondents believe that India's carbon capture and storage (CCS) has an important role to play in India's decarbonisation efforts.



Which sectors are hardest to decarbonise and important to prioritise?

Respondents ranked sectors on priority (Low-to-Highest) and difficulty (Easy-to-Very Hard)

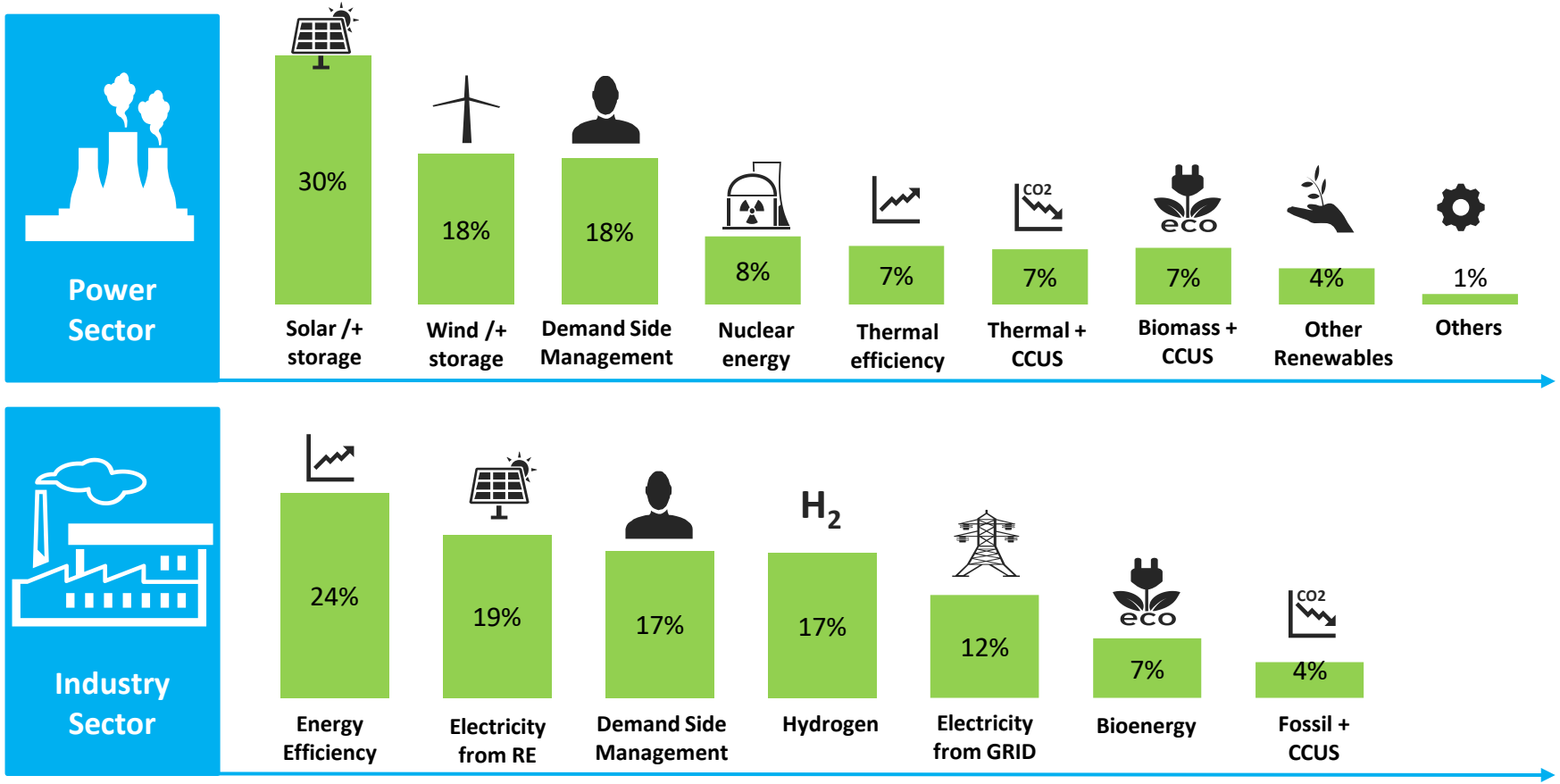


The Power sector is ranked highest in priority; however, it is not considered difficult to decarbonise.

The Industry sector, on the other hand, is ranked low on priority, and is considered most difficult to decarbonise.

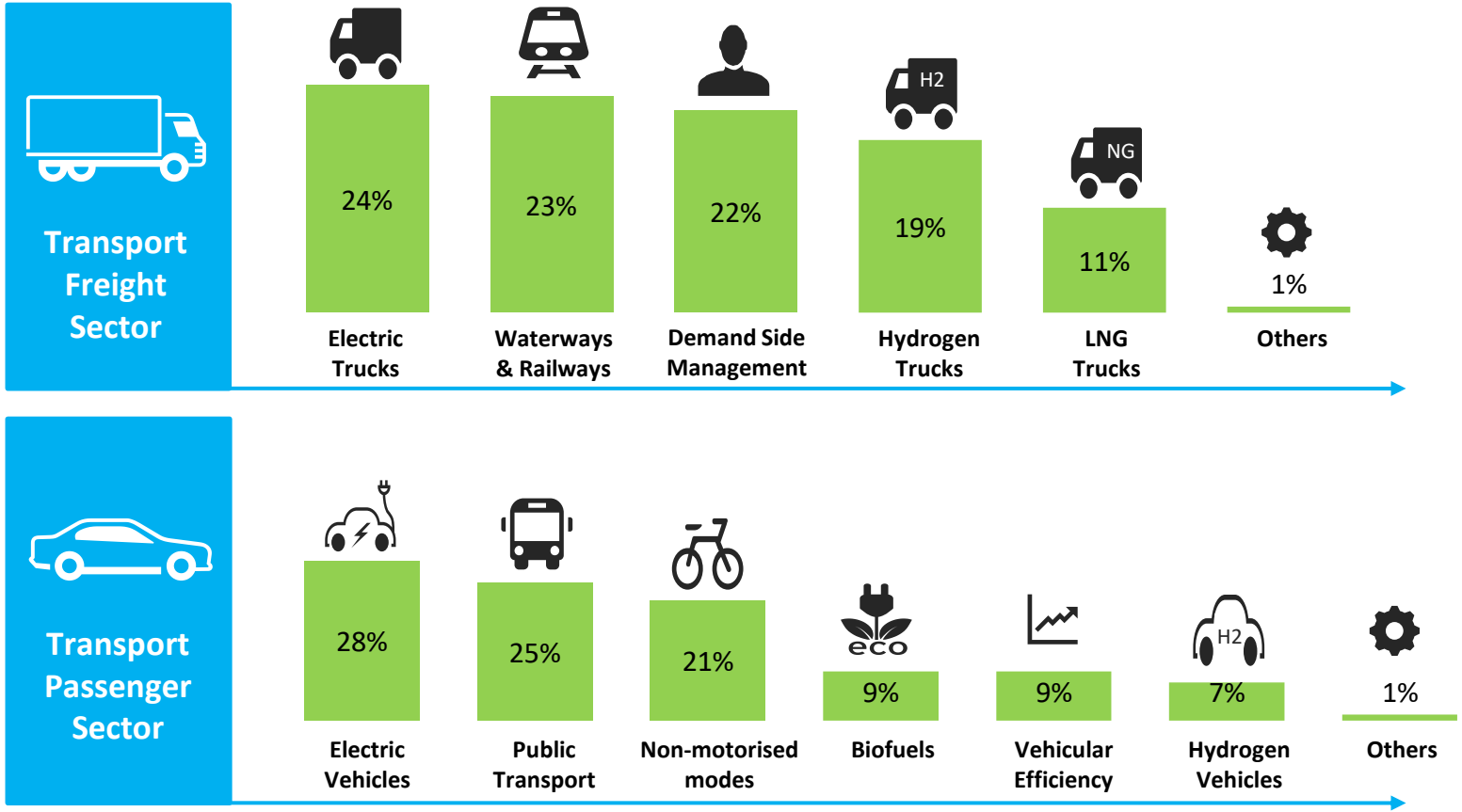
Source: Author's analysis

What are the key mitigation technology options across sectors? (1/3)



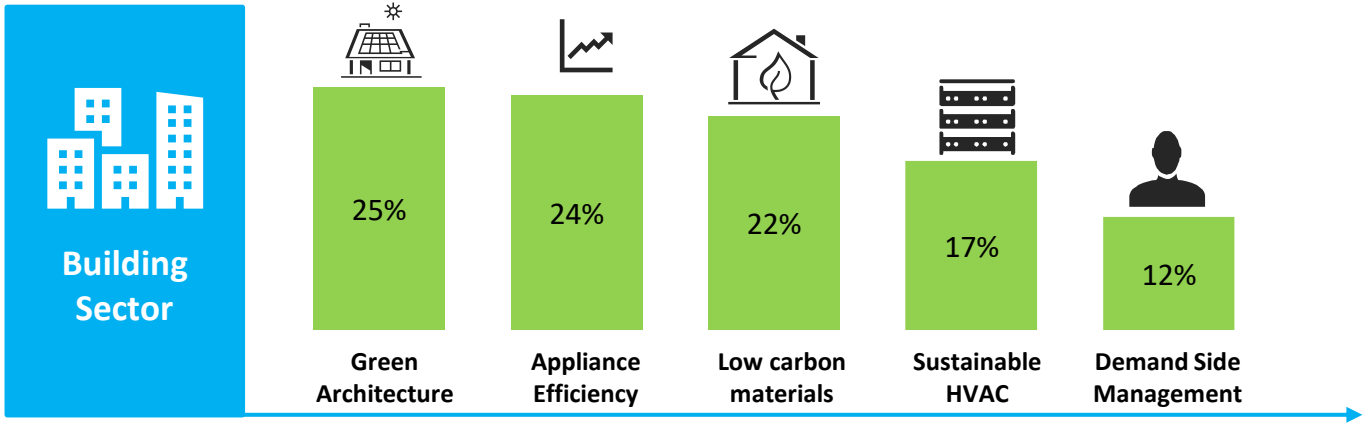
Source: Author's analysis

What are the key mitigation technology options across sectors? (2/3)



Source: Author's analysis

What are the key mitigation technology options across sectors? (3/3)



NOTE: Across sectors DSM stands for Demand Side Management. Each sector has specific DSM policy options. For instance, in case of power sector it is incentivising RE uptake through Discoms, in industrial sector it is resource efficiency/recycling, in transport freight it is improving logistical efficiency, in transport passenger it is incentivising modal shift towards non-motorised modes and in building sector it is dynamic/time of day tariff.

The sum of the percentages in graphs is not equal to hundred because of multiple choice option given to the respondents.

Source: Author's analysis

3 Key highlights

Image: iStock

Key highlights

At COP26, India announced an enhancement in its Nationally Determined Contributions (NDCs) targets and aimed at achieving net-zero emissions by 2070. Since the current survey happened pre-COP, the respondents also expected the same. A majority of the respondents believe that India should enhance its NDC, something that has already happened at Glasgow. More than three-fourths of the respondents believe that India should have a net-zero target. The highest number of respondents choose 2060 and beyond as the timeline when India would achieve net zero. Thus, India's announcements remained in line with the expectations of the stakeholders.

1 Fuel Stories

Nearly two-thirds of the respondents are in consensus that coal use will peak in India by 2040. A majority of the respondents believe that India will phase out coal beyond 2050 (out of which, the majority is with 2060 and beyond).

Alternative fuel options across sectors:

- Hydrogen – Transport and Industry
- Bio-fuels – Transport
- Natural gas – Similar across all sectors

2 Mitigation instruments and alternative technologies

More than three-fourths of the respondents believe that India should have explicit carbon pricing. ETS and carbon tax are chosen almost equally.

Nearly two-thirds of the respondents believe that CCS has a critical role to play in India's decarbonisation objectives.

Key highlights

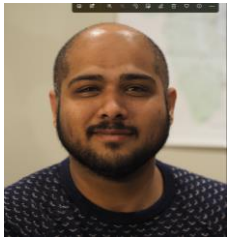
3 Promising technologies across sectors

Sector	Top three promising technologies in the Indian context		
Power	Solar +/ storage	Wind +/ storage	DSM (e.g. incentivizing RE uptake through DISCOMs)
Industry	Industry Energy Efficiency	Electricity from captive RE	Hydrogen; DSM (e.g. resource efficiency/ recycling)
Building	Green Building Architecture	Appliance Energy Efficiency	Low carbon building materials
Transport (Freight)	Electric Trucks	Increasing modal share of Inland waterways and Railways	DSM (e.g. improving logistical efficiency)
Transport (Passenger)	Electric Vehicles (2w, 3w, 4w and bus)	Public Transport (increasing share of bus and 3w)	DSM (e.g. incentivising modal shift to non-motorised modes)

The authors

Ankur Malyan
ankur.malyan@ceew.in

Pallavi Das
pallavi.das@ceew.in



Puneet Kamboj
puneet.kamboj@ceew.in

Sweta Jha
sweta.jha@ceew.in

Ujjawal
ujjawal.k@ceew.in

Dr Vaibhav Chaturvedi
vaibhav.chaturvedi@ceew.in

Suggested Citation: Malyan, Ankur, Pallavi Das, Puneet Kamboj, Sweta Jha, Ujjawal, Vaibhav Chaturvedi. 2022. *India's Vision Towards a Net-Zero Economy: Stakeholder Perspectives*. New Delhi: Council on Energy, Environment and Water

Disclaimer: The views expressed in this study is that of the author. They do not necessarily reflect the views and policies of the Council on Energy, Environment and Water

Peer reviewers: Arnab Kumar Laha, Professor, Indian Institute of Management-Ahmedabad, Gopal K Sarangi, Assistant Professor, TERI School of Advanced Studies, Hitesh Kataria, Manager, KPMG India, and Shalu Agrawal, Senior Programme Lead, CEEW.

Acknowledgment: We would like to thank our peer researchers at the Council on Energy, Environment and Water (CEEW) for providing their inputs in improving the survey questionnaire. Additionally, we would like to thank all the respondents to the survey for contributing their precious time in filling out the responses. We are grateful to the reviewers of this study, Arnab Kumar Laha, Professor, Indian Institute of Management-Ahmedabad, Gopal K Sarangi, Assistant Professor, TERI School of Advanced Studies, Hitesh Kataria, Manager, KPMG India, and Shalu Agrawal, Senior Programme Lead, CEEW, for their comments and suggestions which helped a lot in bringing the study to its current form.

Organisation: The Council on Energy, Environment and Water (CEEW) is one of Asia's leading not-for-profit policy research institutions. The Council uses data, integrated analysis, and strategic outreach to explain – and change – the use, reuse, and misuse of resources.

Image: iStock