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How Green Is India's Stimulus for Economic Recovery?

How India Can Raise Its Ambition for a Green Stimulus in 2021

Executive Summary

As of the beginning of March 2021, no other economy has committed as much money to the energy sector as India has in response to the ongoing global COVID-19 crisis or to meet its long-standing ambitions on other policy objectives, such as energy security, air pollution and climate change.[1] But where is the public money commitment going: towards sustainable energy choices? Or towards fuels or sectors with high carbon emissions?

Analysis of 70 energy-related policies from the Energy Policy Tracker (EPT), as well as India's annual budget announcements in February 2021 presents a "mixed bag" picture. More than US$120bn has been committed to the energy sector since January 2020, of which renewable-energy-related measures received almost twice as much funding as fossil fuels. However, both are dwarfed by policies related to other sectors. These policies largely support transmission and distribution companies in the power sector and may disproportionately benefit fossil fuels, depending upon whether the government promotes more fossil fuels than clean technologies under such programs. While the COVID-19 crisis has dominated energy sector discourse over the past year, we estimate that around ~22% of the committed value is primarily intended to deal with COVID-19, while the rest of the support reflects ongoing government policy objectives on energy security, climate change and air pollution.

In the EPT database, a value is taken for a support measure where government data is publicly available. As a result, a large number of policies (~61%) have not been quantified. Our conservative estimate of US$19bn for these unquantified policies would raise India's overall commitments to at least US$140bn. However, there are some significant policies that remain unquantified, for both fossil fuels and renewable energy, making it hard to determine how this would affect the split of support between renewable energy and fossil fuels.

The policy measures announced since the beginning of the COVID-19 crisis are largely in the form of government subsidies, amounting to a 93% share of the value

[1] Energy Policy Tracker. G20 countries. March 2021.

committed. Although the actual amount of subsidy support could be much higher because a large number of policies that classify as subsidies have not been quantified. A further 6% of the committed value of the policy measures is through investment into state-owned enterprises while 1% is through public finance. The government has also announced policy measures that promote a particular or combination of energy types without any financial outgo in the form of subsidies or public finance. However, in years to come these policies could involve financial allocation of resources from the government. While the number of such support measures is large, the value committed through them has not been estimated due to unavailability of data.

Against the background of this "mixed bag" of measures, this report recommends six areas for action in order to outline a vision for a green stimulus in India for 2021. These action points are intended to strengthen economic action, increase job opportunities and foster sustainability across the board.

1. **Strengthen green industrial policy:** As part of restarting the economy, the government should invest in India's capacity to manufacture for the green energy revolution.

2. **Invest in large-scale RE grid integration:** Instead of just investing in trying to fix the problems of its existing electricity distribution system, India needs to start investing in the system of tomorrow.

3. **Improve energy access:** Increase adoption of distributed renewable energy sources and energy efficiency measures. These are low hanging fruit that would help alleviate discom woes while making power more reliable and helping in job creation.

4. **Compliance with environmental norms:** Avoid further rollbacks in standards and lock-in of fossil fuel assets. Achieving energy security through domestic production that does not exacerbate air pollution or the climate crisis should be the priority.

5. **Improved targeting of subsidies and fossil fuel taxation:** Targeting of subsidies to the intended beneficiaries and the savings to be redirected for promotion of clean technologies. Increase fossil fuel taxation and attach more conditionalities to new fossil projects in order to level the playing field.

6. **Unlocking finance:** Government should work on resolving policy and legacy issues to attract the financial institutions to bring in more capital to the deflationary, domestic renewables sector.

Table of Contents

Executive Summary 1
Introduction 4
How Much of the Fiscal Stimulus is Green? 5
What Does the EPT Data Show About India's Public Money Commitments to Energy During COVID-19? 6
- How Significant Are the Unquantified Policies? 7
- How Is Support for Energy Split Between Fossil Fuels and Renewables? 9
  - Box 1: Budget 2021-22 Is a 'Mixed Bag' for India's Energy Transition 11
- How Is Support for Energy Split Between Different Sectors and Policy Types? 12
  - Box 2: Taxation and Policies Increasing Government Revenue 14
- How Many of These Policies Specifically Aim to Mitigate the Impact of COVID-19? 14
  - Box 3: Government Policies Promoting Social Welfare 16

How Can India Raise Its Ambition for a Green Stimulus in 2021? 17
- Strengthening of Green Industrial Policies 18
- Large Scale RE Grid Integration 19
- Improving Energy Access 19
- Compliance of Environmental Norms 19
- Improved Targeting of Subsidies and Fossil Fuel Taxation 20
- Unlocking Finance 21

Annexure 1: Methodology of the Energy Policy Tracker 22
About the Authors 24

Introduction

2020 and 2021 have seen tragic health and economic consequences on account of COVID-19. Governments across the world have responded with a range of massive fiscal interventions. For example Germany's stimulus in June 2020 amounting to US$45 billion was the first to provide substantial support to green measures. But while there is much talk of a 'green recovery', many governments are in fact prioritising environmentally unfriendly stimulus measures supporting fossil fuels.

India is the third largest emitter of greenhouse gases after China and the U.S.[2] with major sources of emissions including coal power plants, stubble burning, vehicular emissions and construction. As per a recent report by Greenpeace Southeast Asia and technology company IQAir, air pollution led to about 160,000 deaths and economic losses totalling about $85bn in the five most populated cities in the world in 2020. Delhi had the highest toll, despite small improvements in air quality as a result of the COVID-19 lockdown.[3]

To address the issue of climate change and greenhouse gas emissions, India committed to 175GW of renewable energy capacity (RE) by 2022, which it increased to 450GW by 2030 as part of its Paris Agreement goal.[4] Further, the country has pledged a 33-35% reduction in the "emissions intensity" of its economy by 2030, compared to 2005 levels.

The year 2020 gave countries an opportunity to reset, by directing investments towards green stimulus. Global tracking of public money to different energy types reveals that energy-related government support was skewed towards fossil rather than renewable energy in India. Further, the budget announcement in February for the financial year 2021/22 is also a mixed bag in terms of support for India's transition to a sustainable, low carbon economy.

India is progressing well towards its Paris Agreement goals, with ~92GW of installed renewable energy capacity as of January 2021.[5] However, to achieve its renewable energy ambitions, a stable policy environment is a must, along with access to large amounts of global capital and technological know-how. What India needs now is a holistic approach to the energy transition where the push for renewable energy is accompanied by support for a faster move away from fossil fuels.

This report examines in greater detail how the government has been supporting renewable energy since the beginning of the COVID-19 crisis, and what needs to be done to better promote an economic recovery driven by green stimulus.

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[2] Carbon Brief. The Carbon Brief Profile: India. March 2019.
[3] The Economic Times. Air pollution kills thousands in megacities despite COVID lockdowns. February 2021.
[4] India INDC to UNFCCC.
[5] CEA. Installed Capacity Report. January 2021.

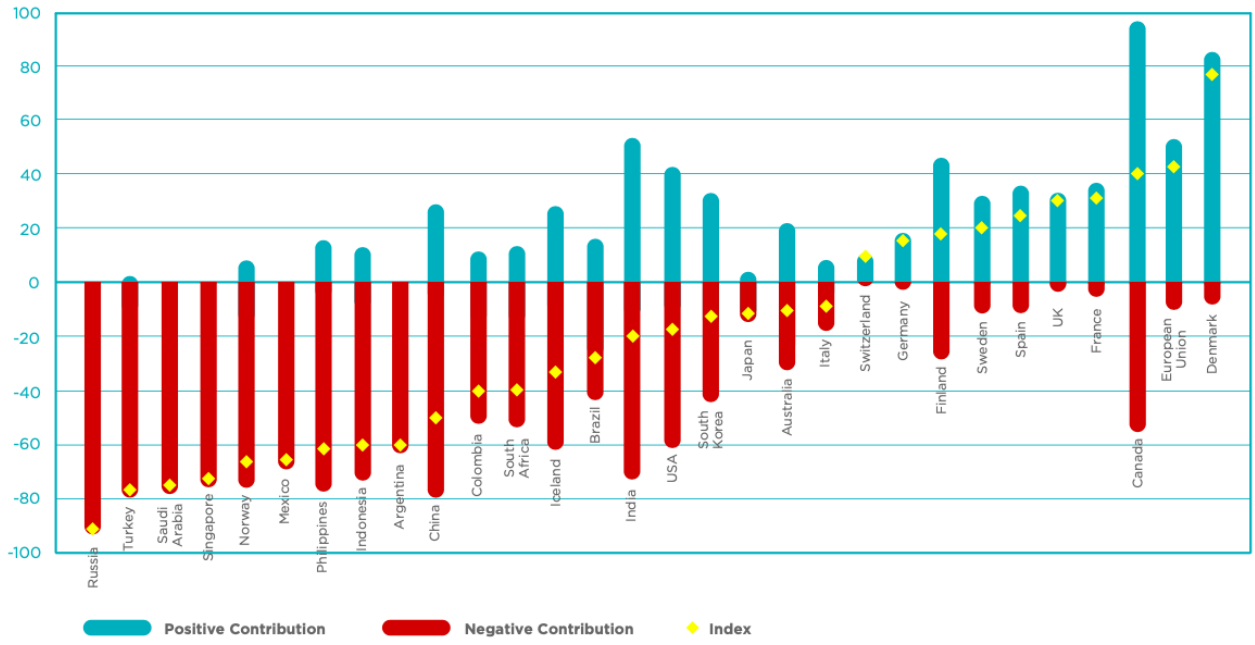
How Much of the Fiscal Stimulus is Green?

Data from Vivid Economics reveals that across 30 major economies[6] out of the US$14.9tn total global fiscal stimulus packages, around 31% (amounting to US$4.6tn) will flow into sectors that have intensive impacts on the environment including agriculture, industry, waste, energy and transport. By contrast, only US$1.8tn is green.[7] The data shows recovery spending will have a net negative environmental impact in most of the economies (Figure 1), driven by the underlying policies supporting different fuels and energy types in the pre-COVID world.

However, the momentum towards a green recovery is building. As per the latest report, which presents data as of 1 February 2021, 17 countries have improved their Green Stimulus Index (GSI) scores, including China, the U.S. and India. This is a significant improvement in index scores based on policy announcements analysed in the first edition in July 2020.

Data by Vivid Economics reveals that India has passed US$325bn in total fiscal stimulus packages in response to COVID-19.[8] India's fiscal stimulus largely supports industry and energy activities with intensive impacts on the environment, but the majority of its most recent stimulus measures in the budget 2021/22 were green, thereby pushing up its GSI score.

Figure 1: Greenness of Stimulus Index as of February 2021



Source: Vivid Economics.

[6] Vivid Economics. Greenness of Stimulus Index. February 2021.
[7] Green measures build resilience through the protection of the climate and biodiversity.
[8] Vivid Economics. Greenness of Stimulus Index. February 2021.

The Energy Policy Tracker (EPT) database developed by the International Institute for Sustainable Development (IISD) and other organisations[9] tracks public money commitments to different energy types.[10] As of 3 March 2021, 31 major economies had committed over US$686bn to supporting energy through new or amended policies, of which US$274bn (40%) supports fossil fuel energy compared to US$259bn (38%) supporting renewable energy. Additionally, US$153bn (22%) is committed to "other" energy, such as nuclear power, first generation biofuels or policies that support multiple sources of energy.

According to the EPT,[11] as of the beginning of March 2021, no other economy has committed as much money to the energy sector as India. The Government of India has committed at least US$122bn to supporting energy since January 2020, of which US$18.25bn (15%) supported fossil energy, US$35bn (28.5%) supported renewable energy and a large proportion amounting to US$69bn (56.5%) supported "other" energy. This includes budgetary transfers, policy support, public finance and investments by state-owned enterprises—for ease of expression, we refer to these collectively as "policies" or "measures" in this report. The EPT, however, only quantifies the cost of a policy that can be drawn from publicly available sources. As a result, the database contains measures that have no cost associated with them, therefore the tally of India's energy-related commitments since COVID-19 is only an "at least" value and could be much higher.

For this report, some policies have been classified into "sectors" and "energy types" (differently than the EPT to suit the Indian context better), and we have only analysed measures that constitute a form of support for at least some part of the energy sector. For more details on the methodology, refer to Annex 1. The next section analyses the EPT data for India in much greater detail.

What Does the EPT Data Show About India's Public Money Commitments to Energy During COVID-19?

One of the strengths of the EPT is that all of the data are fully and transparently reported. IEEFA agreed to work with IISD to examine the data in more detail, and estimate what the full value of energy commitments may be, and whether or not they are taking India on a path to green recovery.

In particular, we analysed policies directed at the energy sector since the beginning of the COVID-19 pandemic to look for answers to the following questions:

- How significant are the unquantified policies?

[9] Energy Policy Tracker. February 2021.
[10] Data by Vivid Economics tracks support to various sectors, while the EPT only tracks support to the energy sector.
[11] Energy Policy Tracker-India. February 2021. Note that the EPT is updated on a weekly basis, and as such any deviation between the summary values presented in this report and the website will be due to updates that have taken place following publication.

- How is support for energy split between fossil fuels and renewables?
- How is support for energy split between different sectors and policy types?
- How many of these policies aim to mitigate the impact of COVID-19 and how many are an extension of support for long-standing government goals?

How Significant Are the Unquantified Policies?

The EPT lists a total of 70 policies from January 2020 to early March 2021 that can be considered as providing some kind of support for specific parts of the energy sector. The central level data is quite comprehensive as it includes all measures announced in the last year. At state level, it only includes key announcements for which information was publicly available in national media sources.

Out of the total policies analysed, three-quarters of the measures included are at the national level, with the remaining quarter at the state level.

The EPT database only provides a value for a support measure where government data is publicly available. As a result, a large number of policies (~61%) have not been quantified. Among the quantified policies, 98% of the value is committed for central level policies.

Table 1: National vs State Quantified vs Unquantified Policy Measures

Parameter	Count	Sum of Value Committed, Rs Crore	Sum of Value Committed, US$bn
National	**52**	**887766**	**119.8**
Unquantified	32	0	0.0
Quantified	20	887766	119.8
State	**18**	**20607**	**2.8**
Unquantified	11	0	0.0
Quantified	7	20607	2.8
Grand Total	**70**	**908373**	**122.6**

Given that a large number of policies are unquantified, an attempt is made to estimate the rough degree of magnitude of such policies on the government budget. This was a qualitative assessment based on the subjective expert judgement of the authors. Policies were grouped into three rough categories: "high", if the value is likely to be more than US$1bn; "medium" if the value is between US$100m and US$1bn; and "small" if the value is less than US$100m.

Table 2: Measure for Degree of Magnitude

Parameter	Impact Value
High	>$1bn
Medium	>$100m & <$1bn
Small	<$100m

Within the already quantified policy measures, 44% of the policies were high in magnitude, 44% were medium and 11% were small. A large proportion (95%) of the committed value is for policy measures of high magnitude, with 5% for medium measures and a negligible share for the small category.

Among unquantified policies, our expert judgement estimated that around 19% of the policies were high in magnitude, 40% were medium and 42% were small. The high-magnitude policies are all types of intervention that we felt confident would involve public money commitments of at least the USD$1bn, including:

- For coal, opening up the sector to commercial mining and pushing back deadlines to install air pollution control technologies in thermal power plants;
- For gas, adding 100 more districts to the City Gas Distribution network;
- For renewables, waiving inter-state transmission charges for renewable energy and the Andhra Pradesh renewables export policy;
- On transport, promotion of liquefied natural gas (LNG), the Delhi Electric Vehicles Policy and e-buses and charging stations under the FAME scheme.

Overall—considering both quantified and unquantified policies—29% were high, 41% were medium and 30% were small.

Table 3: Magnitude of Public Money Commitment for Policies

Parameter	Count	Sum of Value Committed, Rs Crore	Sum of Value Committed, US$bn
Unquantified	**43**	**0**	**0.0**
High	8	0	0.0
Medium	17	0	0.0
Small	18	0	0.0
Quantified	**27**	**908373**	**122.6**
High	12	866036	116.9
Medium	12	41750	5.6
Small	3	587	0.1
Grand Total	**70**	**908373**	**122.6**

If we take a conservative estimate, assigning a median value of the range to policies with medium and small magnitude and the lower limit (US$1bn) to policies with a high magnitude, the value of unquantified policies is at least an additional US$19bn. This is a highly conservative estimate and the full value is likely much higher, taking into account the nature of these "high" magnitude schemes—for example, opening up for the commercial mining of coal, pushing back deadlines to install air pollution control technologies in thermal power plants and waiving inter-state transmission charges for renewable energy.

How Is Support for Energy Split Between Fossil Fuels and Renewables?

According to the EPT data, the government has committed 36% of its new support measures to fossil fuels (6% conditional and 30% unconditional) 48% to clean energy (18% conditional, 30% unconditional), while 17% are for "other energy" sources, which are neither fossil nor renewable. Of this, the value committed to renewable energy is 30%, fossil fuels is 14% and a majority of the committed value (66%) is to "other energy".

Table 4: Fossil vs Clean Policy Measures

Parameter	Count	Sum of Value Committed, Rs Crore	Sum of Value Committed, US$bn
Clean Conditional	13	227855	30.7
Clean Unconditional	21	40239	5.4
Fossil Conditional	3	43000	5.8
Fossil Unconditional	21	87677	11.8
Other Energy	12	509602	68.8
Grand Total	**70**	**908373**	**122.6**

Looking into more specific energy types, we see that 33% of the number of policy measures is for renewable energy (with 27% share of the committed value), followed by 19% for coal (13%) and 16% share for oil & gas (2%). While the share of the transmission and distribution sector in terms of number of policy measures is 9%, the share of committed value is high at 50%. Further, the shares of number of policies to electric vehicles, transport in general and policies supporting multiple energy types and multiple fossil fuels are 6%, 3%, 10% and 1% respectively, while the share of committed value is 2% for transport in general and 0% for all the other energy types.

Table 5: Policy Measures by Energy Type

Parameter	Count	Sum of Value Committed, Rs Crore	Sum of Value Committed, US$bn
Coal (C)	13	114877	15.5
Electric Vehicles (EV)	4	0	0.0
Energy Efficiency	1	6238	0.8
Multiple Energy Types	7	2870	0.4
Multiple Fossil Fuels	1	0	0.0
Non-applicable (non-energy measure)	2	57032	7.7
Oil and Gas (O&G)	11	15700	2.1
Renewables (R)	23	243856	32.9
Transmission and Distribution (T&D)	6	449700	60.7
Transport (T)	2	18100	2.4
Grand Total	**70**	**908373**	**122.6**

The main support measures for fossil fuels are expanding commercial coal mining, new coal transportation infrastructure, providing LPG cylinders to below poverty line (BPL) households and extending the city gas distribution network.

It should be noted, however, that a number of significant measures in the "other energy" category may disproportionately benefit fossil fuels, despite the fact that they are not targeted at fossil fuel production or consumption exclusively. For example, the liquidity support to discoms to build infrastructure, modernise the grid and to settle payment dues to generators will support fossil fuels more than renewable energy. Further, the state level fuel policies, transport policies, development of power projects and transmission infrastructure are categorised to "other energy". If the state promotes more fossil fuels than clean technologies under such programs, it is again likely to benefit the fossil sector more.

Support measures for renewable energy comprise of central government initiatives like production-linked incentive schemes for renewable energy and batteries to boost domestic manufacturing, greening of Indian railways, priority sector lending to renewables and the infusion of capital to Solar Energy Corporation of India (SECI) and Indian Renewable Energy Development Agency (IREDA). At the state level, policy measures were also announced, for example on electric vehicles and solar (farmers in the state of Andhra Pradesh are to receive nine hours of free solar power).

For the unquantified policy measures, it is difficult to estimate how this might affect the share of support for fossil fuels versus renewables without better data on the exact value of the largest support measures. For fossil fuels, the major benefits were the extension of emissions norms deadlines for the thermal power plants, the promotion of LNG in the retail sector and commercial mining of coal. The largest support to clean energy is in the form of waiver of transmission charges to energy generated from renewable energy until June 2023. When the government takes away this benefit, the support that renewable energy is currently receiving will

reduce. The other support measures to renewable energy with high impact include sanctions under the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) scheme, Andhra Pradesh Renewable Energy Export Policy and Delhi Electric Vehicles Policy.

Box 1: Budget 2021-22 Is a 'Mixed Bag' for India's Energy Transition

The budget 2021/22 is a mixed bag in terms of support for India's transition to a sustainable, low carbon economy. The Coal Ministry's budget allocation for FY2021-22[1] for exploration of coal and lignite is down ~15% from FY2020/21. There is a huge cut to the budget allocated to the Ministry of Petroleum and Natural Gas, which is 63% lower than it was in FY2020/21. The lower allocation to the oil and gas sector could be on account of lower global prices and government reform initiatives such as eliminating subsidies on kerosene.

The government has allocated Rs3 lakh crore (US$40.5bn) to discoms which are the backbone of the power sector. While discom reforms are critical, past experience shows that simply pumping in more money does not improve the discoms' operational and financial performance.

For the renewable energy sector, the government has announced a welcome infusion of Rs2,500 crore (US$0.3bn) for SECI and IREDA. It has increased customs duties on solar lanterns and inverters to boost domestic manufacturing.

The government also launched the National Hydrogen Mission which, like the Solar and Storage missions, will be instrumental in the development of this exciting new technology. However, it is yet to be established whether the focus of the hydrogen mission will be production using renewable energy or fossil fuels.

In addition, the government announced Rs2,217 crore (US$0.3bn) to tackle air pollution—but it is a reduction of 50% compared to the Rs4,200 crore (US$0.6bn) allocated in last year's budget.[1] It also announced the Asset Reconstruction Company and Asset Management Company to help banks tackle bad loans.

The budget lacks support for the closure of inefficient coal-fired power plants. Given the state of surplus capacity and low plant load factors (PLFs), the discoms should work with state governments to retire legacy, inefficient and expensive thermal power plants as a key pathway to reducing their average cost of power procurement. Other support measures like tax holidays, tax incentives and access to finance are also required to give a fillip to domestic manufacturing of solar components.

How Is Support for Energy Split Between Different Sectors and Policy Types?

Analysis by Sector Type

The majority of the policy measures are for the power sector which has a 39% share, followed by resources with 23%, mobility with 16%, multiple sectors with 16%, products with 6% and other sectors with 1%.

Of the quantified policy measures, the share of committed value to the power sector is 55%, mobility 31%, resources 8%, multiple sectors 5% and products 1%.

Table 6: Policy Measures by Sector Type

Parameter	Count	Sum of Value Committed, Rs Crore	Sum of Value Committed, US$bn
Mobility	11	279705	37.7
Multiple Sectors	11	45870	6.2
Other Sector	1	0	0.0
Power	27	500403	67.5
Products	4	6238	0.8
Resources	16	76157	10.3
Grand Total	**70**	**908373**	**122.6**

Note: If policy measure support is for more than one sector like power, mobility etc., it is classified to Multiple Sectors. Only one policy of Net Metering is classified to the Other Sector.

In the power sector, discoms receive the most support: Rs90,000 crore (US$12.1bn) for making payments owed to generators and Rs3 lakh crore (US$41bn) announced in the budget for upgradation and modernisation of the grid. Further, the Centre permitted States to exceed their borrowing capacities up to an additional net borrowing space of a cumulative 2% of gross state domestic product upon satisfying measurable targets. This amounts to Rs53,500 crore (US$7.2bn) of government resources directed to states to undertake reforms to improve operational and financial performance of discoms.

In the mobility sector, the MoU signed for setting up 5,000 compressed bio-gas plants for cleaner transport fuels and production-linked incentive schemes for automobiles and auto components are the largest support measures announced by the central government.

In the resources sector, the largest support is for Free LPG cylinders under the Pradhan Mantri Garib Kalyan Yojana scheme. To ease the burden of rural communities facing economic hardships due to the national COVID-19 lockdown, the government announced three free LPG cylinders for beneficiaries of the scheme between April-June 2020. The scheme was extended to September 2020 to ensure that the beneficiaries were able to avail the free cylinders.

Further, it is likely that government support will be even more skewed towards the

power sector with some major policies like a transmission charge waiver for renewable energy generation and an extension of emission norms deadlines remaining unquantified. The government's push to expand the City Gas distribution network will also have a big impact on the exchequer, benefiting multiple sectors.

Analysis by Policy Type

Given the financial impact of COVID-19 on individuals and industries, the policy measures announced since the beginning of the pandemic are largely in the form of government subsidies, which make up a 49% share of the overall number of policy measures announced. However, the value committed for such subsidy measures is high—a 93% share. Although the actual amount of subsidy support could be much higher because a large number of policies that classify as subsidies have not been quantified.

A further 13% of the overall number of policy measures provide support in the form of investment into state-owned enterprises, with 6% of the committed value. And 4% is through public finance, with 1% of the committed value.

The government has also announced general policy support measures, comprising 34% of the overall share. While the number of such support measures is large, the value committed through them has not been estimated due to unavailability of data.

Table 7: Policy Measures by Policy Type

Parameter	Count	Sum of Value Committed, Rs Crore	Sum of Value Committed, US$bn
Government Subsidy	34	840580	113.4
Policy Support	24	2700	0.4
Public Finance	3	8736	1.2
SOE	9	56357	7.6
Grand Total	**70**	**908373**	**122.6**

Box 2: Taxation and Policies Increasing Government Revenue

Taxation as a revenue-raising mechanism is an important way to mitigate fiscal restrictions during tough times like the COVID-19 crisis.

After the classification of COVID-19 as a pandemic in mid-March 2020, the first energy-related policy intended to help Indian states with their tight fiscal situations was the excise duty hike on retail sale of gasoline and diesel. Prices increased first by Rs2 and Rs4 per litre respectively, and then by Rs6 and Rs10 per litre respectively. The price increase was expected to generate additional revenue of Rs39,000 crore (US$5.3bn), and stands out internationally as good practice, with no other major economies hiking petroleum product taxation when world oil prices fell. This policy measure is listed in the EPT but we have not included it in our analysis of support measures because it is primarily a revenue-raising mechanism, and not a tool being used to confer benefits on any specific part of the energy sector.

In other instances, however, energy-related taxation has been used to help promote certain energy sources, and at the same time raise revenue to help the government deal with the COVID-19 crisis. The extension of safeguard duty, for example, on imports of solar cells and modules from China, Thailand and Vietnam is intended to promote domestic manufacturing, while earning more revenue in the coming months. Also, as part of India's Union Budget FY2021/22, the duty on solar invertors was raised from 5% to 20% and on solar lanterns from 5% to 15%.

The government has introduced some other measures to increase revenue, but they are built around increased fossil fuel extraction and production, which will lock in GHG emissions, air pollution and associated harm to human health and well-being. The removal of coal end-use restrictions, for example, represents a step in the opening of India's coal mining sector to private parties, creating new income streams for the government, but also creating new coal-mining capacity with dubious net social benefits.

How Many of These Policies Specifically Aim to Mitigate the Impact of COVID-19?

The EPT records all energy-related public money commitments since January 2020. However, there is no consistent way to determine whether policy support for energy by governments' around the world is COVID-19 "stimulus", particularly as large support measures for fossil fuels may be created outside of formal stimulus programs in order to avoid scrutiny. As a result, the EPT captures a large number of policies: some are measures that respond directly to COVID-19, while others have been affected by COVID-19, but also reflect long-standing policy objectives, such as energy security (which directly or indirectly includes the government's objective of

a 'self-reliant India' and also tackles the issue of unemployment among others), air pollution and climate change.

We examined the measures in the EPT in detail to better evaluate the extent to which policies were driven predominantly by COVID-19 or by other objectives. The policy documents specifying that the measures were announced to deal with the COVID-19 crisis were assigned COVID-19 as the primary rationale. For other policies, a qualitative assessment of the primary rationale was conducted based on the subjective judgement of the authors, categorising policies by 'air pollution', 'climate change' and 'energy security'.

Table 8: Policy Measures by Rationale

Parameter	Count	Sum of Value Committed, Rs Crore	Sum of Value Committed, US$bn
Air Pollution	1	18000	2.4
C-19	15	197757	26.7
Climate Change	25	227726	30.7
Energy Security	29	464890	62.7
Grand Total	**70**	**908373**	**122.6**

Based on the quantified policy measures, we find that ~22% of the committed value of policy measures is primarily to deal with the COVID-19 crisis. Further, based on our best efforts to classify policies, we inferred that energy security was the primary rationale for almost half (51%) of the committed value. The other reasons are climate change and air pollution with 25% and 2% shares in terms of value committed, respectively.

In May 2020, the government announced a Rs 20 lakh crore stimulus package[12] to ease economic distress caused by the COVID-19 lockdown. While the initial package focused on support for healthcare and welfare, the government announced measures for supporting the energy sector to revive the economy. The government introduced various initiatives to help the energy sector deal with the COVID-19 crisis. The largest of these support measures was a liquidity boost for discoms. Others included reducing domestic natural gas prices; a waiver of transmission charges for renewable energy generators; and revising private sector lending guidelines to prioritise renewables.

In order to address the issue of energy security and make India self-reliant and boost domestic manufacturing, the government announced initiatives like production-linked incentive schemes, commercial mining of coal, concessional loans for setting up of power projects and the extension of the safeguard duty on imports of solar cells and modules.

At the same time as tackling difficulties relating to the COVID-19 crisis, the government has also introduced measures to combat climate change and air

[12] The Economic Times. India's Rs 20 lakh crore Covid relief package one among the largest in the world. May 2020.

pollution. The recent budget allocated Rs 2,217 crore (US$ 0.3bn)[13] to tackle air pollution, and the central and state governments' EV, renewable energy and energy conservation policies are a further step towards combating issues of climate change and local air pollution.

This picture may change a little as some policies with high impact could not be quantified due to the unavailability of data in the public domain. While COVID-19 was the priority for the government in 2020, in the energy sector it continued to support its other stated objective of energy security by boosting domestic production and manufacturing and tackling climate change etc.

The government should use this opportunity to channel its resources towards more sustainable energy choices, which would enable it to help people through the COVID-19 crisis while also meeting its energy security, self-reliance, air pollution and climate change objectives.

Box 3: Government Policies Promoting Social Welfare

In addition to the above rationale, an effort to understand whether policy measures were promoting social welfare or not was undertaken.

Out of the 70 policies analysed, only four state clear aims to combat unemployment and create jobs. These include India's Green Strategic Partnership with Denmark; Andhra Pradesh's Renewable Energy Export Policy; the Ratle Hydroelectric Plant in Jammu & Kashmir; and the goal of 5,000 compressed bio-gas plants (CBG) by 2025, as part of the Sustainable Alternative Towards Affordable Transportation initiative. Only the latter two have been quantified, amounting to Rs5282 crore (US$0.71bn) towards the hydro power project and Rs2 lakh crore (US$27bn) for CBG. Thus, equalling US$27.7bn, job-related policies have a 22% share of the total quantified energy support by the Indian government of US$122bn. Although boosting employment is a primary goal for the government, it is likely that the energy sector has not created many jobs. The government needs to introduce initiatives and policies that support the creation of more jobs in the energy sector.

A few other policies state the aim of providing relief to people in India in different ways. First, free LPG cylinders, introduced in 2016 under the Ujjwala Scheme, were distributed to 8 crore beneficiaries. During FY2020/21 this subsidy was stated to be worth Rs13,000 crore (US$1.75bn). In FY 2021/22, though the subsidy will not continue in full, an additional 1 crore LPG users will benefit from the extension of the Ujjwala Scheme via continued discounted prices; the costs for this have not yet been officially quantified.

[13] Ministry of Finance. Expenditure Budget 2021-22. February 2021.

Second, India's Union Budget for FY2021/22 promised an additional Rs2,217 crore (US$300m) to tackle the burgeoning problem of air pollution specifically for people in 42 urban areas with more than a million inhabitants. However, this is 50% of the amount allocated in the last budget, because the fund was underutilised. There is no monitoring of and accountability for the use of such funds.

Third, at state level, since June 2020 farmers in Andhra Pradesh can receive as much as nine hours of free solar power per day. The value committed for this policy is Rs8,900 crore (US$1.2bn). Thus, job-related and clearly socially beneficial energy policies account for 25% of the total value of energy support announced by the central and state governments in the last year.

How Can India Raise Its Ambition for a Green Stimulus in 2021?

Much global stimulus is going to industries and energy types with negative environmental impacts. Instead of taking the opportunity to shift to renewable energy, most countries are focusing COVID-19 economic recovery measures on sectors that contribute to environmental degradation.

Fatih Birol, Executive Director of the International Energy Agency (IEA), has urged countries to put clean energy at the heart of stimulus plans.[14] Support measures, while protecting people and helping industries to cope with the crisis, must also combine environmental measures.

In contrast to most other G20 countries, India's economic recovery from COVID-19 has not been overwhelmingly dominated by quantified support to fossil industries and infrastructures. For the quantified policies, the value committed to renewable energy is 30%, fossil fuels is 14% and a majority of the committed value (66%) is to "other energy"—though noting that a number of measures in the "other energy" category may disproportionately benefit fossil fuels, despite not being targeted at fossil fuel production or consumption exclusively. There are some significant policies that have been introduced that remain unquantified, for both fossil fuels and clean energy, making it hard to determine the full direction of trends.

Undoubtedly, India's goal to reach 175GW of renewable energy by 2022 has been hailed by the international community for a good reason. However, India is still lacking a vision of a green stimulus for 2021, one that stimulates both economic activity and creates jobs as well as maintaining and increasing commitments to sustainability.

[14] IEA. Put clean energy at the heart of stimulus plans to counter the coronavirus crisis. March 2020.

Investments by public sector undertakings and public finance still overwhelmingly support coal as well as the oil and gas sector instead of renewable energy sources. It is no secret that the Government of India, like many other governments, is cash strapped. But, in order to spend taxpayers' money more responsibly and provide a level playing field, no more subsidies and public finance should be given to sources of high carbon emissions.

Instead, by providing more incentives to clean technologies, India could kill two birds with one stone: lower electricity prices would provide important relief to both industrial and private electricity users; and India could leapfrog to fossil-independent development pathways, setting an example for other emerging economies and developing countries. Consequently, India could embrace a green stimulus in a way that also achieves its domestic development and political priorities in various regards.

This report outlines the top 6 recommendations for India to commit to green recovery.

Strengthening of Green Industrial Policies

India's existing national and state-level green industrial policies should be strengthened. So far, they are dominated by import tariffs and duties such as on solar inverters, cells and modules. Some state-level strategies could serve as blueprints for a coherent national strategy like Maharashtra's Unconventional Energy Generation Policy, Gujarat's Solar Policy or Tamil Nadu's Electronics Hardware Manufacturing Policy. All these policies include well-tuned measures to increase the uptake of solar technologies by either incentivising solar manufacturing and/or industrial/private users.

India strengthened its financial support in the annual budget FY2021/22 to SECI as well as IREDA and launched its first National Hydrogen Energy Mission. However, important gaps remain, such as off-grid solar rooftops and an ambitious extension of the KUSUM scheme in order to increase the income of farmers and rural populations via solar technologies. Andhra Pradesh's support to farmers—nine hours of free solar power every day—has been an important step in this direction and could serve as template for other states and the centre to consider.

Green industrial policies can also include the uptake of EVs. A few states, like Telangana and Delhi, have shown strong will to boost adoption of EVs through EV policies in 2020. Since the outbreak of the COVID-19 pandemic, hundreds of E-buses and charging stations were sanctioned under the FAME scheme throughout the country, further strengthening environmentally friendly mobility. EVs provide immediate relief from air pollution, but to be environmentally-friendly from source to use, the share of renewable energy sources in India's national grid has to be further increased. Besides, after the end of phase 2 of FAME scheme in 2022 as part of India's National Electric Mobility Plan, more weight could be laid on providing EV-related support to lower-income groups, including jobs in India's nascent (electric) car industry.

Large Scale RE Grid Integration

Ambition for a green stimulus could be raised by supporting large-scale RE grid integration across India. Among others, this includes storage, other balancing mechanisms and the inclusion of other clean technologies like offshore wind and green hydrogen. Overall, more than half the value of all quantified energy policies is linked to transmission & distribution (T&D) alone. Under tranche 1 of the stimulus package 'Atma Nirbhar Bharat Abhiyan' in 2020, discoms were supported financially with as much as Rs90,000 crore (US$12.1 bn). Even more, Rs3 lakh crores (US$41bn) have been committed under India's biggest single quantified energy policy in FY2020-21. The policy is for India's ambitious reforms-based and result-linked power distribution sector scheme to improve discoms' energy efficiency with various measures.

However, as important as it is to ease financial strains on discoms, it does not improve large-scale RE grid integration. Various other (state) policies related to T&D have been announced, but their overall impact cannot be considered large and remains to be seen regarding RE-grid integration.

There is emphasis on decreasing energy losses and increasing profitability of discoms through the Energy Conservation Act, thereby focusing on such low-hanging fruit that promise immediate benefits. However, large-scale RE grid integration across India must be a logical next step for reducing electricity costs for both industries and private users. We cannot focus so much on fixing the existing electricity distribution system that we overlook investments in the system of the future.

Improving Energy Access

To improve energy access through clean technologies, distributed renewable energy should be promoted. Installation of solar rooftop and solar irrigation pumps can help discoms in reducing their energy consumption and costs. Andhra Pradesh's support to farmers—nine hours of free solar power every day—has been an important step in this direction and could serve as template for other states and the centre to consider.

Government should expand adoption of off-grid solar rooftops and an ambitious extension of the KUSUM scheme in order to increase the income of farmers and rural populations via solar technologies. Further, government should promote energy efficiency of appliances in a big way as energy efficiency investments will help improve discom woes, making power more reliable and it would also help in job creation.

Compliance of Environmental Norms

A green stimulus for India in 2021 should avoid further rollbacks in standards and lock-in of fossil assets. Early this year, India's Power Ministry proposed pushing back the deadlines for adoption of emissions norms by coal-fired power plants once more. Initially set in 2017, this deadline has been repeatedly postponed, with 2022

as the most recent deadline. With no new dates at all, the official argument that uniform ambient air quality should be maintained across the country instead of uniform emissions norms appears doubtworthy.

Higher emission norms while profiting India's coal sector, will increase ambient air pollution. Avoiding rollbacks of standards are thus an important, necessary part of a new green stimulus package.

Further, in the early days of the COVID-19 pandemic, the Ministry of Environment, Forests and Climate Change removed the coal washing requirement for the supply to thermal power plants. The official argument was that cost-increasing coal washing requirements—intended to increase the calorific value of coal and bring down the undesired ash content of coal—render importing coal more attractive. However, there is a lack of evidence.

Atma Nirbhar Bharat, undoubtedly, requires boosting domestic production and reducing reliance on imports. However, increasing coal production has high social and health costs. Moreover, achieving energy security at the cost of locking-in fossil infrastructure cannot be the right choice. Achieving energy security through domestic production that does not exacerbate air pollution or the climate crisis can in fact be achieved through decentralised renewable energy. Thus, increasing emissions norms, enforcing coal washing requirements or raising duties on imported coal, among others, can contribute to a low carbon economy.

Improved Targeting of Subsidies and Fossil Fuel Taxation

Due to poor targeting, discoms in many states are providing subsidies not only to the poor but also to wealthier, high-consuming households. The government needs to target subsidies to the intended beneficiaries and the savings can be redirected for promotion of clean technologies.

Further, an ambitious green stimulus package in 2021 could be funded to some extent (if not fully) by new and higher fossil taxation as well as conditionalities. The excise hikes on gasoline and diesel have already raised significant extra revenue for the government. This increased revenue should be used for promoting sustainable energy choices.

Various tax breaks and exemptions, such as on coal extraction under tranche four of Atma Nirbhar Bharat Abhiyan, continue to increase the amount of foregone revenue, even though their quantification is often difficult. Certainly, renewable energy received tax breaks as well, but low compared to fossil fuels, further distorting the playing field.

Abolishing subsidies is always politically difficult. The more important it is then to increase fossil taxation and attach more conditionalities to new fossil projects in order to level the playing field but also taking into consideration who will be affected by such increased taxation. The increased fossil fuel taxation should not disproportionately impact vulnerable people.

Unlocking Finance

India needs to access large amounts of global capital to meet its energy security, renewable energy targets and reduce energy intensity to meet its Intended Nationally Determined Contributions (INDCs). The renewable energy sector in India has received more than US$42bn in investment since 2014, but requires a further US$500bn over the next decade in order to achieve its 2030 renewable target, plus the associated grid firming and grid infrastructure modernisation and capacity expansions.[15]

As India starts to recover from the COVID-19-induced global economic slowdown, the government should work on resolving policy and legacy issues to attract the financial institutions to bring in more capital to the deflationary, domestic renewables sector. In the last two years, most of the financing in the clean energy space is through mergers and acquisitions (M&A) activities, green bond issuances and spinning-off of operating renewable assets via infrastructure investment trust (InvIT). This form of capital should be further unlocked, thereby freeing up project developers' capital to take on ever-larger tender opportunities.

Internationally, there is a Network for Greening the Financial System (NGFS).[16] The Reserve Bank of India (RBI) should join this network and can design policies that incorporate environment and climate risk management in the country's finance sector, steering limited public and private sector investments toward a green recovery.[17]

[15] IBEF. Indian Renewable Energy Industry Report. October 2020.
[16] NGFS. Origin and Purpose.
[17] CSIS. Agenda for India's Green Recovery. February 2021.

Annexure 1: Methodology of the Energy Policy Tracker

The Energy Policy Tracker (EPT) is a comparatively new tool to drive sustainable policy change and hold governments accountable by bringing transparency to their policies in response to the COVID-19 crisis. The EPT responds to the rapidly growing demand for tracking bailouts of high-carbon and other polluting assets and emerging green policies in response to COVID-19 as well as the post-pandemic recovery. Developed by a core group of six organisations, including the International Institute for Sustainable Development (IISD), the EPT is contributed to by more than 20 organisations from around the world.

The EPT website showcases publicly available information on public money commitments for different energy types, and other policies supporting energy production and consumption in the power generation, extraction, mobility and building sectors. The research follows a bottom-up approach, which involves collecting data on individual policies at a country level, and then aggregating them. Policies are classified according to different criteria. One of the key criteria is a policy's environmental profile that depends on 1) which energy types it benefits, and 2) whether it has any environmental conditionality attached. Throughout the Tracker, information is split across five categories: "fossil unconditional"; "fossil conditional"; "clean unconditional"; "clean conditional", and "other energy". Available information on sector, energy stages, mechanisms, policy objectives are also reported into the Energy Policy Tracker.

The EPT-website includes only the policies that are approved by national, subnational or municipal governments, central banks, majority state-owned public finance institutions, majority state-owned enterprises (SOE) or other government-related bodies. It includes new policies or amendments of existing policies. Excluded are existing policies such as ongoing subsidies and other support mechanisms in the energy sector—those that already functioned in previous years. For simplicity, 1 January 2020 is the earliest possible start date for policies registered on the Tracker. These new or amended public money commitments, and other policies, are additional to many other government policies that existed to support different energy types before the COVID-19 pandemic.

The values reported are only drawn from publicly available sources, with a strong preference for government sources—no values committed or disbursed have been estimated. In cases where policy values are available, they are reported at their committed face value, even if the entire amount will not be eventually disbursed. On a case-by-case basis, additional checks are made to avoid double-counting of public money commitments, such as in the case of a national program being disbursed by regrants at a subnational level. Typically, public money commitments through government policies, public finance and SOE investments are considered to be additional to each other. Exchange rates are based on the OECD annual average exchange rates for 2020. Population numbers for all countries and the EU (as EU-27) are 2019 data sourced from the World Bank Open Data.

For this report, some variation in categorisation is done to suit the Indian context.

Differences Between the Energy Policy Tracker and IEEFA-IISD Methodology for India

The indicator "energy type" and "Sector" has been adapted to better represent the policies in the India scenario.

- The "Oil & Gas" is clubbed as one category instead of two;
- Similarly, we combine the categories of "Biofuels & waste", "Solar", "Wind", "Hydro", "Other renewable" and "Multiple renewable" to the head category of "Renewables";
- Policies related to electric vehicles (EVs) are categorised separately, while the EPT lists them as "Multiple energy types" because of their reliance on the various fuels in the electricity mix. Also, the EPT-indicator "sector" changed from "multiple sectors" for EVs to "mobility";
- Policies with "Multiple energy types" which include "Energy efficiency", has been re-classified to "Transmission & Distribution" (T&D), where the policy support is for reforms in T&D sector;
- A distinction is made for the "Mobility" sector to "Electric Vehicles" and "Transport" in general as a separate energy type. When a policy refers to strengthening public transport, we re-classified its energy type to "Transport" to represent support for fossil fuel-dominated, conventional public transport;
- Where "Products" like solar lanterns, invertors, cook stove etc. are targeted by a policy, this has been changed adequately where the sector stated was" Other sector" but where the focus clearly is on these products.

In addition to what the EPT-website publicly states, we analysed some other parameters, such as "Impact", "Government Support Measures" (which includes policies increasing government revenue, subsidy, State owned investment and public finance) and further sub-categories to the internally used "Rationale".

Finally, there are some measures that are a source of revenue generation for the government but also support enhanced production of a particular energy type. In the EPT, such measures are typically classified as revenue-raising measures, but we have reclassified them as "Policy Support" for the type of energy on which they confer benefits. In one instance—India's excise tax increases on gasoline and diesel—there was no clear energy-sector-related beneficiary, so the measure was excluded from our analysis, which is predominantly concerned with government support measures.

About IEEFA

The Institute for Energy Economics and Financial Analysis (IEEFA) examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. www.ieefa.org

About IISD

The International Institute for Sustainable Development (IISD) is an award-winning independent think tank working to accelerate solutions for a stable climate, sustainable resource management, and fair economies. Our work inspires better decisions and sparks meaningful action to help people and the planet thrive. www.iisd.org

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