



Eco Endeavourers Network  
*Striving for the Planet in Peril*

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# Nationally Determined Contributions

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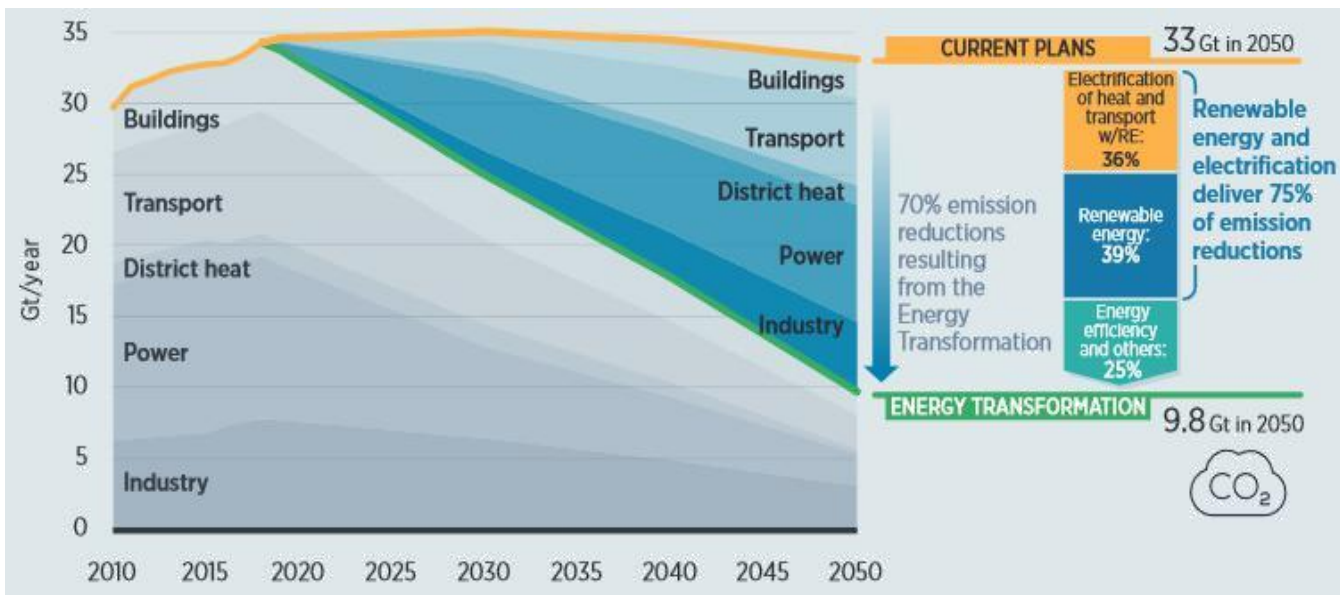
## **Start on... Plan on... Act on...and Implement on... Nationally Determined Contributions**

### *Towards Pledges into Action!*

At the Conference of Parties (COP 21) meeting held at Paris in 2015, Nationally Determined Contributions (NDCs) were submitted with the goal of greenhouse gases emission reductions and identifying financial needs for mitigation and adaptation. A total of 186 countries representative of global emissions submitted NDCs towards their commitments and targets set in the form of goals. Along with the voluntary commitments to emission reductions, NDCs are one of the key mechanisms for implementing international response to climate change under the UNFCCC Paris Agreement. They are an opportunity to put countries on a climate compatible pathway. The key focal point organizations that report on the nature and material significance of the NDCs include the UNFCCC, UNEP and the World Bank. UNFCCC maintains the registry of the NDCs with the submission from 171 parties and other updates. Earlier in 2015, UNEP had published nine emission gap reports, IN 2018 also UNEP concluded that NDCs would result in 53–56 GtCO<sub>2</sub> e of global emissions in 2030, whereas acceptable emissions to keep warming below 2°C emissions is mentioned to be less than 40 GtCO<sub>2</sub>e by 2030. NDCs include conditional commitments and unconditional commitments, where in conditional one includes actions of other countries and or financial or other type of assistance. Implementing unconditional NDCs with no further action would mean a warming of more than 3.2°C by 2100 compared to pre-industrial levels (UNEP, 2018). The report also mentioned that going by the mentioned commitments there shall still be inadequacy in bridging the gap by 2030. The actual target set is to ensure warming be restricted to below 2°C and 1.5°C.

Government pledges to reduce greenhouse gas (GHG) emissions, including NDCs under the Paris Agreement, in 2019 fell short of the global goals adopted in 2015 and served to limit global warming to about 2.6°C (Climate Action Tracker, 2019). This is an alarming shortfall compared to the levels of permissible climate change agreed. Accordingly, Current NDC commitments miss the 2°C objective by 30% and the 1.5°C effort by over 70% (Climate Action Tracker, 2019). More so, specifically, 70 countries announced their intention to raise the ambitions of their national action plans by 2020, while 65 national and sub-national governments pledged to achieve net zero emissions by 2050 (UNCAS, 2019).

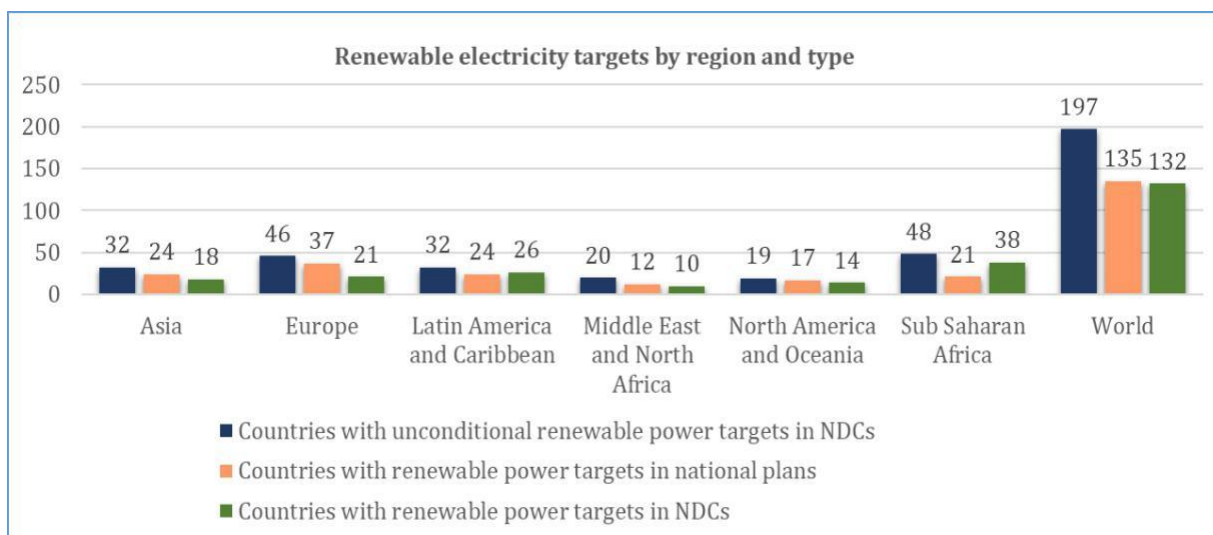
Fundamental contribution of renewables to achieving global climate objectives, quantifying renewable power sector targets included in current NDCs and assessing opportunities for strengthening the pledges in 2020 competitiveness of technologies and the multiple benefits that they bring to the economy (e.g., job creation). As part of the “ratchet mechanism” of the Paris Agreement, countries are meant to progressively increase the ambitions of their Nationally Determined Contributions (NDCs) in 2020 and every five years thereafter.



**Image Source: IRENA, 2019,** a Renewables indicative of deployment of wind, solar photovoltaic, etc.) and in direct end-use applications (solar thermal, geothermal, biomass), “Energy efficiency” denotes efficiency measures in industry, buildings and transport (e.g., improving insulation of buildings or installing more efficient appliances and equipment).

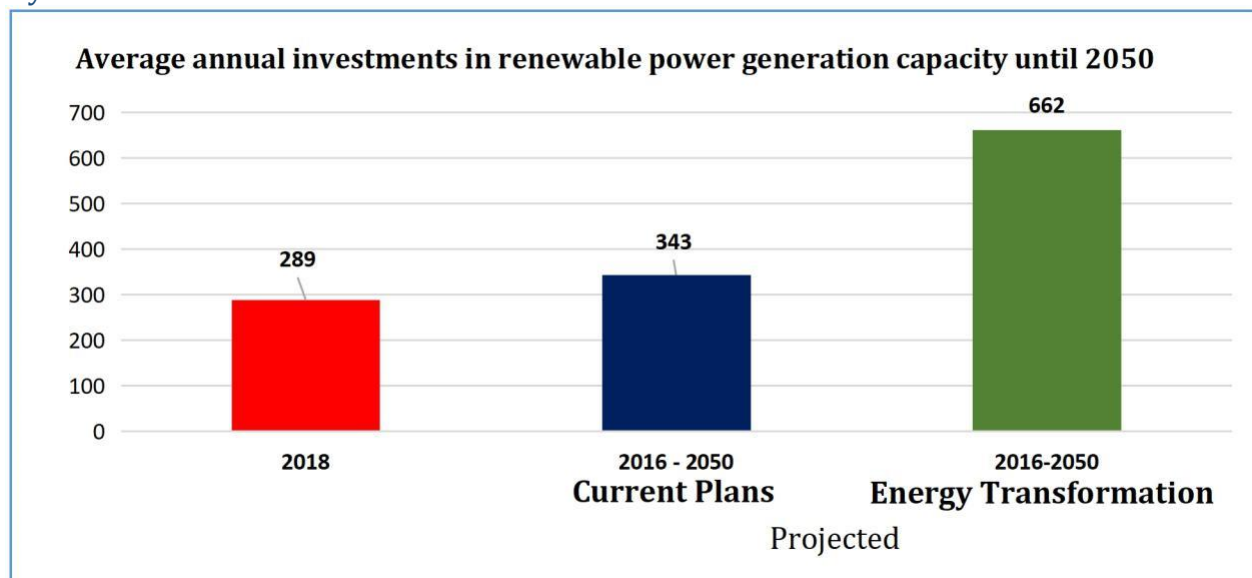
As on date, 184 Parties to the UNFCCC have formally submitted 156 NDCs. Of these, 90% (or 140 NDCs) refer to renewable energy action for the power sector, while 67% (or 105 NDCs) include quantified targets for renewable electricity generation (IRENA, UNFCCC). As on date implementation of first round of NDCs has brought online an additional of 1.5 Terawatt of renewables, taking expected global renewable energy installed capacity to 3.2 TW in 2030 (UNFCCC).

Based on IRENA’s estimates (IRENA, 2019b), current and planned national targets and policies, including the commitments made in NDCs, would deliver an estimated 5.2 TW of renewables by 2030. This is as opposed to the 3.2 TW that would result from the implementation of NDC targets alone. governments can increase their renewable electricity pledges by 64% in 2030, simply by aligning the next round of NDCs to other national energy plans. This is particularly true in the Middle East and North Africa (where NDC targets would more than double), Asia (+92%), and North America and Oceania (+72%).



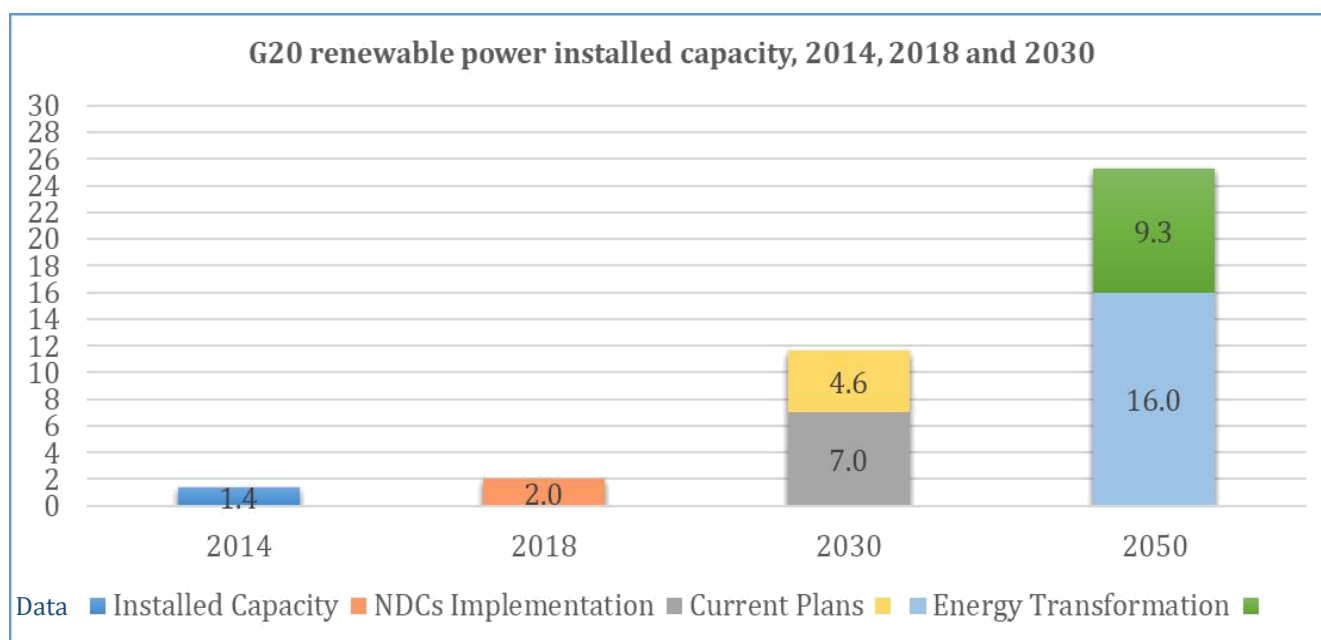
All UNFCCC Parties  
 Source: IRENA analysis

According to Frankfurt School, UNEP centre / BNEF (2019) and IRENA (2019a), if renewables were to grow at the 8.6% annual rate experienced in 2015-2018, global renewable energy targets in NDCs would already be achieved by 2022. If renewables were to grow at 8.6% annual rate experienced in 2015-2018, global renewable energy targets in NDCs would already be achieved by 2022.



Source: Frankfurt School-UNEP Centre/BNEF (2019) and IRENA (2019a)  
 G20 Members – Renewable Power Targets in the NDCs

IRENA analysis (2017b) showed the fundamental G20 contribution needed to achieve the objectives set by the Paris Agreement. These countries alone are responsible for 80% of the global energy-related CO<sub>2</sub> emissions reductions projected for 2050 and account for about 90% of the global renewable energy potential for both 2030 and 2050 (IRENA, 2019b). Till date, 12 of the G20 countries have included quantified renewable energy targets in their NDCs – Brazil, Canada, China, the European Union (including France, Germany, Italy and the UK), Indonesia, India, Japan and South Africa. In addition, although Turkey has not ratified the Paris Agreement, it has included a conditional quantified target for hydropower in its INDC. With the implementation of NDC targets, around 1.3 TW of additional renewable power capacity is projected to come online between 2015 and 2030 in the G20. In this scenario, 2.8 TW of renewables would be installed by the end of 2030. In the Energy Transformation scenario, renewable power installed capacity in the G20 would reach 7 TW in 2030 and more than double to 16 TW by mid-century. In other words, about 60% of the renewable energy potential for 2030 is being left untapped by NDC targets. An additional 4.3 TW if added by 2030 in a cost-effective way would not only put the G20 on track to meet the ambition of the Paris Agreement, but also lower significantly the cost of the energy transformation through fuel savings, avoided investments and reduced health and environmental damage (IRENA, 2019a).



Source: IRENA (2019b, 2019c); IRENA analysis

### **Placing NDCs of Power Sector into Action Package –** *Striving for climate positive accords*

Renewable power targets in NDCs cannot be considered in a single platform. Recent deployment trends for renewables, as well as with the scale of deployment projected under two alternative scenarios developed by IRENA – i.e., Current Plans (or Reference Case), and Energy Transformation (or RE map Case) are the new normal in renewable energy sector. NDCs would result in 3.2 TW of global renewable installed capacity at the end of 2030, current and planned policies are expected to deliver 5.2 TW. A higher deployment level, amounting to 7.7 TW, could be achieved in 2030 in a cost-effective way and with considerable socio-economic benefits globally (IRENA, 2019b),

The pace of renewable energy deployment foreseen by current NDCs is slower than actual deployment trends. Though IRENA analysis reveals that actual growth in renewable power installed capacity during 2015–2018 has already well exceeded NDC implementation projections. The deployment and implementation trends being set in NDCs have laid a strong platform for setting strategic and action based results to strive for climate positive accords.

### **Knowhow on NDC Power Targets vs. National Energy Plans and Strategies**

National and sub-national renewable energy targets are a significant resource feature of the global energy policy landscape; however, these targets are not always reflected in NDCs. Currently 135 countries have national, regional and/or subnational renewable electricity targets in place, representing 69% of the total. By contrast, only 132 Parties included renewable electricity targets in their NDCs. However, the number falls to 85 if only unconditional targets are considered (i.e., those to be achieved unilaterally). To date, only 94 countries include renewable power targets in both NDCs and national plans, whereas 41 only set targets in national energy strategies, and 38 countries only include them in NDCs. Interestingly, most countries in the latter group (i.e., with targets only in NDCs) are in Sub-Saharan Africa, and Latin America and the Caribbean. This is because developing country Parties in these regions often include conditional renewable electricity targets, which are more ambitious pledges that countries intend to implement provided that international support is made available, and that do not imply any use of domestic resources. Even when countries include renewable power targets in both their NDCs and other energy plans, these often contradict each other, with NDC targets tending to be less ambitious.



*Only 85 countries have unconditional renewable power pledges in their NDCs, while 135 have targets in other national and sub-national energy plans*

*\*\*\*Aligning the next round of NDCs to national and subnational energy plans already in place around the world would lead to a 64% increase in projected global renewable power installed capacity in 2030\*\*\**

NDC power targets vs. estimated 2030 cost-effective potential, Existing renewable electricity targets, both in NDCs and other national energy policies, do not put the world on track to attain the goals of the Paris Agreement. Much more can be achieved in a cost-effective way and with considerable socio-economic benefits. In IRENA's Energy Transformation scenario, the share of renewables in the power sector more than doubles from 25% in 2018 to 57% in 2030, before ramping up to 86% by 2050 (IRENA, 2019b). Under this scenario, global renewable energy installed capacity would reach over 7.7 TW by 2030, before growing further to 18.1 TW by mid-century. By contrast, the implementation of NDC targets would only result in 3.2 TW of renewables installed in 2030. In other words, current NDC targets leave 59% of estimated renewable potential untapped. An additional 4.6 TW could be added globally in a cost-effective way by 2030. As shown in Figure 9, the greatest untapped potential in absolute terms exists in Asia (3 TW), North America and Oceania (896 GW), and Europe (290 GW). In relative terms, the installed capacity of renewables could almost quadruple in North America and Oceania, triple in the Middle East and North Africa, and almost triple in Asia, compared to what is foreseen in NDCs. To exploit the full cost-effective potential for renewables in the power sector, IRENA (2019a; 2019b) estimates that USD 22.6 trillion in cumulative investment would be needed in renewable generation capacity by mid-century. This implies at least a doubling in annual investments compared to current levels, from USD 289 billion in 2018 to USD 662 billion through 2050 (Frankfurt School-UNEP Centre/BNEF, 2019; IRENA 2019a),

Advancing the global energy transformation to address climate challenge would require a massive scaling-up and re-directing of investments in the energy sector. A cumulative USD 110 trillion would be needed under an energy transformation scenario (IRENA, 2019b). Of this, only 20% (or USD 22.6 trillion) would be for new renewable generation capacity – illustrating the fact that power is only one aspect of the solution. Over USD 37 trillion would need to be invested in energy efficiency, USD 13 trillion in electrification (including for electric vehicles and railways) and USD 12 trillion in power grid and energy flexibility measures (e.g., smart meters and energy storage).

## How can Corporates steer renewable energy deployment?

To stimulate more ambitious renewable energy deployment, corporate sourcing plays a major role in energy transformation and achievement of the Paris Agreement's objectives. Enabling frameworks that encourage corporate sourcing while triggering additional renewable energy investment include supporting credible and transparent system for certification and tracking of renewable energy attribute certificates, creating energy market structures that allow for third party sales between companies and independent power producers (IPPs), and incentivising utilities to provide green corporate procurement options such as green electricity consumer labels and green tariff programmes. According to IRENA analysis (IRENA, 2018), corporate sourcing of renewables is already taking place in more than 75 countries, driven by environmental and social benefits such as cutting emissions, but also economic benefits including cost savings, long-term price stability and security of supply. Close to 200 companies indicated that at least half of their electricity was sourced from renewables, with 111 of these companies already procuring more than 85% of their electricity from renewables. By committing to procure renewables for electricity, heat and transport, private sector companies have a unique opportunity to drive significant additional investment in renewable energy and help achieve the Paris Agreement's objectives. IRENA analysis (IRENA, 2018) has found that companies actively consumed about 465 terawatt-hours (TWh) of renewable electricity in 2017. This represents about 3.5% of total electricity demand and 18.5% of renewable electricity demand within the C&I sector. Electricity demand in the C&I sector is projected to grow from 13 500 TWh in 2017 to 18 100 TWh in 2030. About 57% of this projected demand would need to come from renewables to be in line with global climate objectives (IRENA, 2019b), equalling about 10 300 TWh. Based on existing company targets, commitments and ambitions, corporate sourcing is estimated to grow to only 2 150 TWh by 2030 (IRENA, based on IRENA, 2019b; 2018).

*According to definition by IRENA data analysis and NDCs reporting they endeavour-Corporate sourcing of renewables refers to a company actively procuring or self-generating renewable electricity to supply its own operations, as compared to a passive approach in which consumption is based on the average renewable electricity content available in the grids from which companies source their electricity.*

To enable greater involvement of corporates, an integrated approach is needed that combines effective regulatory and policy action (example : review of investment restrictions, clarification of fiduciary duties, enhanced climate risk disclosure), development of capital markets and appropriate financing instruments (example : green bonds, green funds and other green securities), co-operation between the public and private sectors to develop a pipeline of bankable renewable energy projects, as well as internal changes on the part of institutional investors (e.g., capacity building, adoption of long-term sustainability mandates) so that they can manage risks while maximising the benefits from renewable energy investments (IRENA).

Aligning capital with climate objectives and then re-directing of investment towards climate-resilient assets such as renewable energy is trending in though at slower pace but yes there's a strategic seeding /pumping of investments in this sector. It also comes with climate related risks associated with key impetus being given in carbon-intensive investments and since risks

are a major setback in deployment and implementation of climate positive and renewable energy projects, aligning investments with private capital will steer though climate goals and net positive energy transformation bound outcome.

Cumulative investment needed through 2030 and 2050 under Current Plans and Energy Transformation scenarios in the following sections:

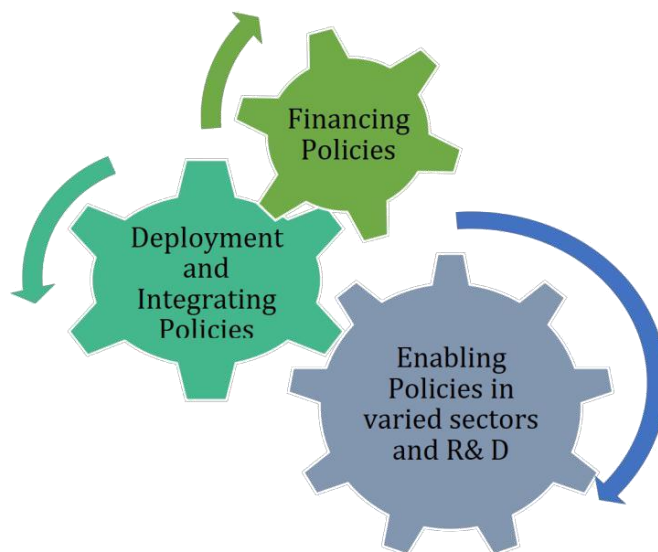
- CCSPower&othersgridsand energy flexibility
- Electrification
- Energy efficiency
- Renewables - direct end uses and district heat
- Renewable - power generation
- Powergenerationaside - thermal and nuclear
- Supply side

The scale of emission reductions required to achieve the objectives of the Paris Agreement implies that countries must look well beyond the power sector. The scale of emission reductions required to achieve the objectives of the Paris Agreement implies that countries must look well beyond the power sector.

### **Way Forward - *Newer Thoughts and Perspectives***

- Dossiers for NDCs - Benchmarking towards a registry of data of emissions and emission registry *“Repository as New Normal”*.
- Climate risk disclosure has changed the perception of viewing at emissions and their reduction scenarios. The Task Force on Climate-Related Financial Disclosures (TCFD), has set out guidelines for ‘decision-useful’ climate-related disclosures, reported that even though every year more companies are disclosing their climate risks, currently only one in four discloses information aligned with more than five of TCFD’s 11 recommended disclosures, and only 4% make disclosures aligned with at least 10 of the 11 recommended disclosures (CDSB and SASB, 2019).
- Transition road map  $\longrightarrow$  Socio-Economic Outlook  $\longrightarrow$  Environment – Economy Energy Model  $\longrightarrow$  Socio-Economic Footprint: GDP, Employment and Social Welfare.
- With renewable energy components, NDCs could help to advance multiple climate and development objectives. The NDCs in the current set up provide an immediate opportunity for countries to reassess their targets and raise their ambitions for renewables, both within the power sector and beyond.
- NDCs are a key enabler of sustainable development, contributing directly and indirectly to 17 SDGs, including poverty alleviation, education, water and sanitation. Renewables also bring broad socio-economic benefits, creating new jobs and fostering local industries.





**Figure: Policy framework for NDCs**

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