

## Morocco at COP 26

By Rim Berahab & Uri Dadush

### Abstract

As COP 26 unfolds, more attention is likely to be paid to big emitters such as China and the United States than to the situation of small developing countries, even though they are more exposed to the consequences of climate change. Morocco falls into this category. This Policy Brief examines Morocco's mitigation objectives under its NDCs and its performance to date before exploring the needed measures to achieve the 2030 mid-term goal. Although Morocco has made significant progress in terms of decarbonization, overall performance is below what was expected. Meeting its NDC targets, thus, requires a considerable deceleration of Morocco's emissions, which can constitute a significant challenge given the financial and social implications of the energy transition. This is a challenge that can be met with appropriate policies. Meanwhile, recent initiatives by the EU and the US to link trade policies with carbon emissions send an important message to the rest of the world that the cost of inaction on climate policy in terms of lost business opportunities may come sooner than expected.

At COP 26, which began in Glasgow on Sunday and will conclude on Friday November 12, all eyes are on the big emitters – China, the United States, India and the EU. Are they meeting their commitments under the Paris Agreement? What new measures will they agree to? How much are the giant developing countries, including the likes of Brazil and Indonesia, willing to promise on issues ranging from cutting coal use to halting deforestation? And – assuming countries live up to their declarations of intent, will that be enough to meet the Paris Agreement target and keep temperatures from rising much above 1.5 C above the pre-industrial level? At Glasgow, far less attention is likely to be paid to smaller and poorer developing countries, even though they are home to large populations likely to be among the worst affected by the temperature rise. For example, according to the [World Economic Forum](#) “3 billion people could live in places as hot as the Sahara by 2070 unless we tackle climate change”. Smaller and poorer developing countries are

also likely to be the least equipped to adapt to the change in climate. For this reason alone, they must – helped by their wealthier partners - contribute to the mitigation of higher temperature and extreme weather events.

Morocco, whose head of government leads the delegation in Glasgow, is one such country. In this note, we examine how Morocco is progressing on the mitigation component of its Nationally Determined Contribution targets (NDC), what it is likely to promise, and the main challenges it faces in meeting that promise. We also put the spotlight on the most important policy measures Morocco should take to accelerate decarbonization. The adaptation component of Morocco's NDC is not discussed in this note, but it is important to mention that its cost is estimated to be very high, at about \$ 40 billion over the next 10 years, or 35% the nation's GDP in 2020. Morocco's adaptation is discussed in some detail in Morocco's [NDC update](#) published in June 2021.

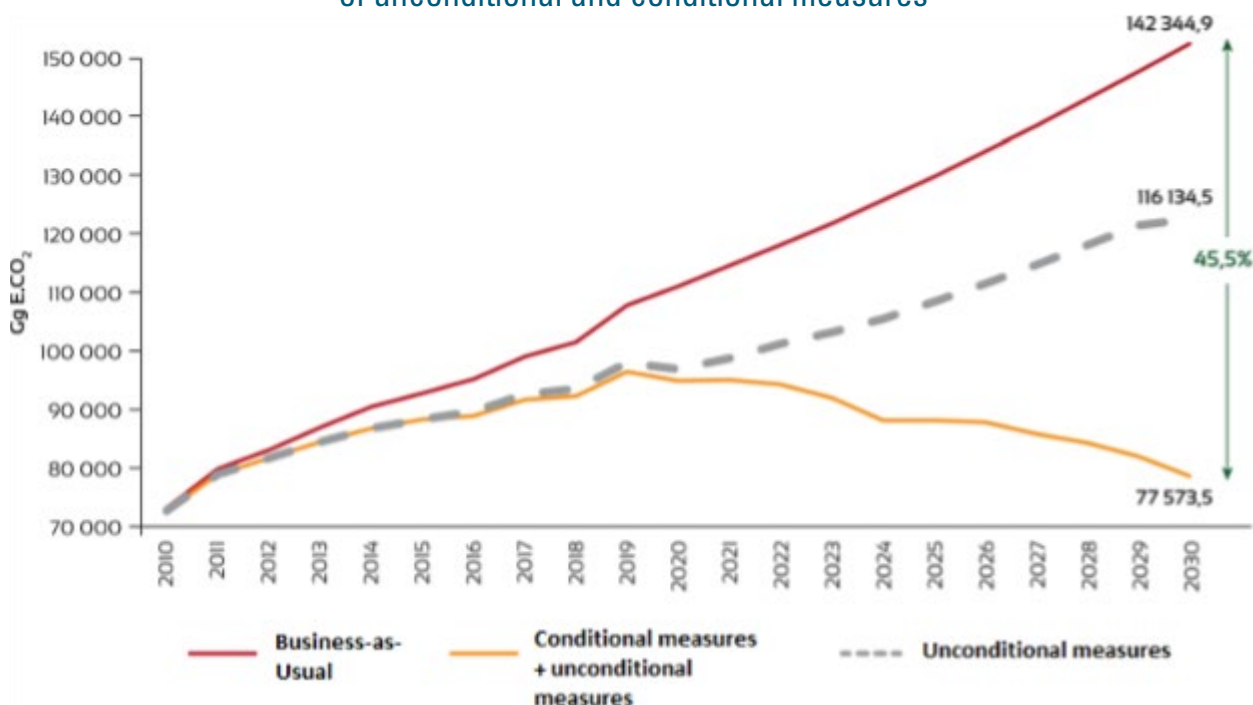
## Targets and Performance to Date

Morocco's newly announced mitigation target<sup>1</sup> aims for an unconditional GHG reduction of 18.3% relative to its "business as usual" (BAU) scenario and a conditional target of a 45.5% reduction in the event of Morocco receiving an additional [21.5 billion \\$](#) of aid.<sup>2</sup> So far, unfortunately, there is little evidence of aid promises of this magnitude materializing. Morocco has received

only about 1.4 billion \$ of finance commitments (i.e., loan commitments, not grants), mainly from the World Bank. For this reason, our focus is on the unconditional scenario. Moreover, given the need for urgent action, not to mention the uncertainties associated with long-term projections, our focus is on the targets to be met in 2030, rather than those in 2050.

The Chart below shows Morocco's GHG targets under its updated NDC and how they compare to the BAU scenario.

**Figure 1: Change in GHG emissions from baseline and mitigation scenarios of unconditional and conditional measures**



Source: Kingdom of Morocco, Updated NDC.

According to World Bank data in 2018 – the last year for which data is available - actual GHG emissions were already below the BAU scenario by about 10%. This good result may, unfortunately, have more to do with the BAU scenario's overly optimistic assumption of rapid economic growth in Morocco than with progress on decarbonization. For example, over 2010-2020 Morocco grew at an average annual rate of 2%, a large deceleration from the previous two decades, when Morocco grew at an average annual rate of 6%.

1. Morocco's new mitigation scenario includes [additional targets](#) for the phosphates and cement sectors and intends on undertaking preparatory work on future carbon markets under Article 6 of the Paris Agreement.

To evaluate Morocco's decarbonization pathway we can examine the more specific goals set by the previous NDC proposed in 2016 and assess where we are now.

To reach its 2016 mitigation goal, Morocco sought to transform its energy sector by reducing its dependence on energy imports and increasing the share of renewable energy in electricity production. The following targets were set:

2. The total cost of mitigation actions in the NDC is estimated at US\$38.8 billion, including US\$21.5 billion for conditional actions.

- To achieve 42% of installed electricity capacity from renewable energy by 2020 and 52% by 2030.
- To improve energy efficiency by 12% in 2020 and 15% by 2030.
- To cut fossil fuel subsidies
- To increase the use of natural gas

Despite some important achievements, such as in increased capacity in renewables and lower fossil fuel subsidies, overall results have fallen short of these targets. For example, Morocco's final energy consumption has grown at a rate roughly equal to that close to that of GDP over 2016-2020 indicating little improvement in energy efficiency.

Since the energy sector, including [electricity production](#), accounts for about 26% of Morocco's GHG emissions, Morocco needs to diversify its electricity mix from coal. It is true that wind and solar energy has gained ground in Morocco over the last two decades. The share of renewables in the total energy supply is now stable at around 4% in 2019 compared to 1% in 2000, and the share of renewables in electricity generation has [increased](#) from 7% in 2000 to 19% currently, a share similar to that of France and Tunisia, but significantly lower than that of Spain and Portugal. However, the penetration of renewables remains below the high targets set. The installed renewable capacity, defined as the maximum amount of electricity that a generator can produce under ideal conditions, was 37% in 2020, below the 42% planned for the same year. Several factors may have contributed to this disappointing outcome, ranging from technical or technological constraints, to cost and finance availability, and to the difficult external and domestic economic environment. But some more controllable factors also contributed, including the persistence of regulatory and institutional impediments that hinder the implementation of energy transition strategies, and the still [incomplete liberalization](#) of the renewable electricity generation market.

Importantly, Morocco's electricity mix continues to [rely significantly on imported coal](#), which accounted for around 68% of electricity generation in 2020, a much higher share than in 2010, when it was 46%. Morocco commissioned a 1.4 GW Safi coal plant in 2018, and in 2020, [extended the operating period](#) of the Jorf Lasfar thermal power plant until April 2044.

Natural gas accounts for only 9% of Morocco's electricity generation, while other neighboring countries in North

Africa rely heavily on it for their electricity generation. Natural gas accounts for only 1% of Morocco's total final energy consumption (TFC). Still, the use of natural gas in Morocco has increased more rapidly than other sources from a low base, by an average of 6% p.a between 2005 (year of its introduction in Morocco's energy mix) and 2019.

To address energy subsidies, Morocco undertook a broad-based reform. The reform aimed to improve energy security among the vulnerable population and lower carbon emissions while also reducing the fiscal burden. Gasoline and fuel oil subsidies were completely eliminated in 2014 and those on diesel were gradually reduced and eliminated by the end of 2015. Significant fiscal space was freed up so investment could be redirected to renewable energy sources, namely wind and solar electricity generation. Subsidies on liquefied petroleum gas (butane gas) remain for social reasons, avoiding a disproportionate burden on poor [populations](#).

## Meeting the Target to 2030: What does Morocco need to do?

A simple way to assess the likelihood of Morocco meeting its GHG targets to 2030 is to compare the recorded growth of emissions over 2010 to 2018 (the latest available data) and that projected in the unconditional scenario from 2018 to 2030. It should be noted that there is some variation on emissions data between national sources, UN data and that used as reference for the BAU scenario. However, we believe that the trends discussed here are broadly correct. According to World Bank data, the rate of actual GHG emissions increase between 2010 and 2018 was on average 2.6 % p.a. The target growth rate set by the unconditional scenario is growth of emissions of 1.8% a year from 2018 to 2030. The target implies a significant deceleration of Morocco's emissions which will present the authorities with a significant challenge, especially if economic growth is higher than the disappointing results of recent years. However, this is a challenge that can certainly be met with appropriate policies.

According to a recent [PCNS study](#), Morocco could achieve national emissions reductions of as much as 40% compared to the BAU scenario cost-effectively by 2030 by undertaking certain measures. That would imply Morocco's emissions meeting the unconditional

target set in its new NDC by a wide margin. The measures needed consist of vastly increased electrification of end-use sectors – including adoption of electric vehicles (EVs) - and increased use of renewable energy, principally in electricity generation. Significant reductions in GHG emissions can also be achieved in the residential sector.

These measures can additionally contribute to significantly reducing the Moroccan energy bill, which represented about [7%](#) of Morocco's GDP in 2019, through the improvement of energy efficiency and by substituting fossil fuels with renewable energies.

The electrification of Morocco's end-use sectors will require grid development and increased system flexibility capable of sustaining higher demand. Many [barriers](#) must be overcome, first, to promote electric mobility, notably the high initial costs of EVs compared to internal combustion engines and the high cost of Battery Energy Storage Systems.

Under any scenario, large investments will be required to support Morocco's decarbonization. These expenditures, if borne by the state, will add to already high levels of public debt. Hence the need to reduce fossil fuel subsidies in the household and power sector. Most importantly, Morocco should aim to become a more attractive destination for domestic and foreign investors interested in profiting from its decarbonization thrust. This can be achieved by reforms which make it easier to do business in Morocco, as discussed in various [studies](#). But financial incentives can also play an important role, for example by encouraging adoption of electric vehicles, the use of heat pumps, solar thermal and induction boilers for the agricultural and residential sectors, and investment in renewables in the power sector. Implementation of a carbon pricing system in some high-emitting sectors entails many complexities but may also help support the transition.

Important non-financial measures to promote decarbonization include more stringent technical and environmental standards in new construction and building renovation. Regulatory reform in large energy projects could help stimulate private sector participation. Reform of liquefied natural gas subsidies – a sensitive issue - needs to be addressed at some point.

Many of these measures imply a rising price for fossil fuel use, and, because the transition is costly and takes time, compensatory measures for the most vulnerable in society as they bear these costs must be an essential part of the plan.

## Conclusion

In recent weeks, the European Union announced a proposal to place a carbon tax on imports, including on sectors such as cement and fertilizers, which Morocco exports to Europe. More recently, in the run up to COP 26, the EU and the United States reached a deal on their long-standing dispute on aluminum and steel tariffs decided by the Trump Administration. As part of their agreement, the EU and US issued a joint statement committing to work together to establish mechanisms that discourage imports of carbon laden, or “dirty” imports, beginning in the steel sector. Whether these proposals materialize into concrete measures or not, they send an important message to the rest of the world that the cost of inaction on climate policies in terms of lost trade opportunities may come sooner than many expect.

It is encouraging that, at COP 26, the Moroccan Minister of Energy Transition and Sustainable Development declared that Morocco would demonstrate its leadership as a nation committed to the fight against climate change, doing its part for the international community. She also emphasized Morocco's desire to access new sources of climate finance, including by attracting increased foreign and private investment to assist in its decarbonization effort.

But the path to mitigating climate change is long and arduous. Moreover, important as it is, decarbonization is only one aspect of the fight against climate change. Because global warming is already upon us, adaptation is critical. This is especially true in the case of Morocco, which is very exposed to water stress, and whose agricultural sector – employing some [38% of its labor force](#) – is continually at risk of drought.

## References

- Berahab, R., et al., 2021. Morocco's Decarbonization Pathway, Part I, II, III & IV.
- Chauffour, J-P, 2018. Morocco 2040: Emerging by Investing in Intangible Capital, World Bank.
- Conseil Economique, Social et Environnemental, 2020. Accélérer la transition énergétique pour installer le Maroc dans la croissance verte.
- Fleming Sean, 2020. 3 billion people could live in places as hot as the Sahara by 2070 unless we tackle climate change. World Economic Forum.
- ONEE. 2020. Bilan des activités – Energie Electrique.
- Royaume du Maroc, 2021. Contribution Déterminée au niveau nationale- actualisée.
- 2019. 2ème rapport biennal actualisé dans le cadre de la Convention Cadre des Nations Unies sur les Changements Climatiques.
- Terrapon-Pfaff, J. & Amroune, S. 2018. Implementation of Nationally Determined Contributions- Morocco Country Report.
- World Resources Institute, 2020. Morocco: Fuel Subsidy Reform Designed to Support a Just Transition to Renewable Energy

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The views expressed in this publication are those of the author.

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The PCNS advocates the concept of an open, responsible and proactive « new South »; a South that defines its own narratives, as well as the mental maps around the Mediterranean and South Atlantic basins, within the framework of an open relationship with the rest of the world. Through its work, the think tank aims to support the development of public policies in Africa and to give experts from the South a voice in the geopolitical developments that concern them. This positioning, based on dialogue and partnerships, consists in cultivating African expertise and excellence, capable of contributing to the diagnosis and solutions to African challenges.



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