

# ASSESSMENT OF SUBNATIONAL AND NON-STATE CLIMATE ACTION



EUROPEAN UNION

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# European Union

## COUNTRY CONTEXT

The European Union (EU) has made considerable progress in decarbonizing its economy, lowering its greenhouse gas (GHG) emissions (by 2017) by 23% since 1990, while more than doubling its GDP during that same time span (European Commission, 2018a) (Gaventa et al., 2018). This shift is supported by the 2030 climate and energy framework that aims for at least 40% reductions in GHG emissions (compared to 1990 levels) also enshrined as the EU's nationally determined contribution (NDC). To achieve these goals, the EU aims to reach a 32% share of renewable energy and 32.5% improvement of energy efficiency in 2030. These targets are supported by economy-wide energy supply, buildings, and transport sector policies, of which the European Emission Trading System covers the largest amount of GHG emissions. European countries are required to develop National Energy and Climate Plans for the period 2020 to 2030. Based on the assessment of these plans, the European Commission calls on Member States to step up ambition. The stakes are high: “if no further action is taken and global temperature increases by 3.5°C, climate damages” by the end of this century in the EU “could total at least €190 billion, a net welfare loss of 1.8% of its current GDP” (European Commission, 2018a).

The latest assessments by NewClimate Institute, PBL and IIASA includes two GHG projections, of which one indicate that the EU would achieve its NDC, while the other is short of achievement if the aforementioned policy packages are fully implemented (Kuramochi et al., 2018; den Elzen et al., 2019). These findings are supported by den Elzen et al. (2019).

## INTERACTIONS BETWEEN NATIONAL GOVERNMENT AND SUBNATIONAL AND NON-STATE CLIMATE ACTORS

The EU climate policy is for a large part established at the European level but needs to be implemented by the Member States. The majority of international cooperative initiatives (ICIs) registered on the Global Climate Action (NAZCA) platform are led by EU countries, and mainly countries in western Europe (Chan and Bencini, 2018). Small non-state actors, in particular, need more support, and in general local action must be better acknowledged (European Economic and Social Committee, 2018). For example, the EU does not make any reference to non-state actors in their NDC (Hsu et al., 2019). In addition, only five EU countries mention at least one city climate action in their National Energy and Climate Actions Plans, and only four refer to the EU Covenant of Mayors (Sailler, 2019). The Netherlands is one example where the national government includes different stakeholders, such as companies, the financial sector, and NGOs, in its efforts to establish reduction measures in each sector that result in achieving the country's economy-wide target.

Many local governments in the EU Covenant of Mayors have put forward pledges in line with EU's NDC, committing to reduce GHG emissions at least 40% below 1990 levels by 2030. The Under2 Coalition, which brings together regions and cities, includes 44 EU signatories, out of 220 total participating regions. Moreover, London, Paris, Stockholm, Barcelona, Copenhagen, Helsinki, Manchester, Nottingham and Heidelberg have pledged to be carbon neutral in or before 2050 (Unit Energy & Climate Intelligence, 2019). Climate change is a topic that is being discussed in European boardrooms, but the extent that it influences strategic decision making remains an open question (CDP, 2018). Transparency of climate action is slowly increasing due to the Task Force on Climate-related Financial Disclosure (TCFD) and the implementation of the EU Sustainable Finance Action Plan (CDP, 2018; European Commission, 2018b).

## COMPARING SUBNATIONAL AND NON-STATE TRAJECTORY WITH NATIONAL TRAJECTORY

Almost 75% (380 million) of the EU's population resides in urban areas (UNDESA, 2018). This assessment includes roughly 5,700 cities, representing nearly 178 million people, and 31 regions with more than 98 million people, that have made quantifiable targets to reduce GHG emissions.<sup>1</sup> It also includes approximately 780 companies, controlling over \$5.4 trillion USD in revenue<sup>2</sup> – and including 322 of the world's largest companies<sup>3</sup> – that have made quantifiable climate commitments, most frequently in the financial services, biotech and pharmaceuticals, and electrical and electronic equipment sectors.

Together, these cities, regions and companies represent 1,500 MtCO<sub>2</sub>e/year in 2015, accounting for overlap between actors. These individual city, region, and company commitments could reduce emissions in 2030 by 110 and 320 MtCO<sub>2</sub>/year or 3.8% to 9.2% below the projected emissions under current national policies, assuming all commitments are fully implemented and such efforts do not decrease efforts elsewhere (Figure 1, top panel). The lower bound of the projected emissions in this “Current national policies plus individual actors’ commitments” scenario in 2030 would be about 300 MtCO<sub>2</sub>e/year below the EU's NDC target emission levels. These results suggest that the EU could further raise its ambition level, to pursue a 48% reduction below 1990 levels by fully taking the existing commitments of regions, cities and companies into account; its current NDC aims to reduce emissions 40% below 1990 levels by 2030. A reference scenario in the in-depth analysis document underlying the EU's long-term vision document (European Commission, 2018) projects a 48% reduction including LULUCF in 2030 below 1990 levels; our results are consistent with this EU scenario projections. It should be noted, however, that while our calculations incorporate LULUCF emissions, the EU's NDC target does not specify the extent to which LULUCF sinks would be accounted for.

ICIs – networks of cities, regions, companies, investors, civil society, and, in some cases, countries, pursuing common climate action – could have a significantly larger impact. If they realise their goals and such efforts do not decrease efforts elsewhere they could reduce emissions in 2030 by 790 to 1,200 MtCO<sub>2</sub>e/year or 27% to 34% below the projected emissions under current national policies. Initiatives focused on renewable energy, non-CO<sub>2</sub> GHGs and cities and regions account for the largest share of this estimated mitigation potential (Figure 1, bottom-right panel). The potential impact of ICIs is smaller compared to the results in the 2018 report, mainly due to the exclusion of a renewable energy initiative (EU Wind Initiative) that received low scores in the function-output-fit (FOF) analysis presented in section 2.2, and the revision of the target/roadmap for the Architecture 2030 initiative. The full implementation of the quantified mitigation potential from ICIs would put the EU on track to achieve carbon neutrality by around 2050.

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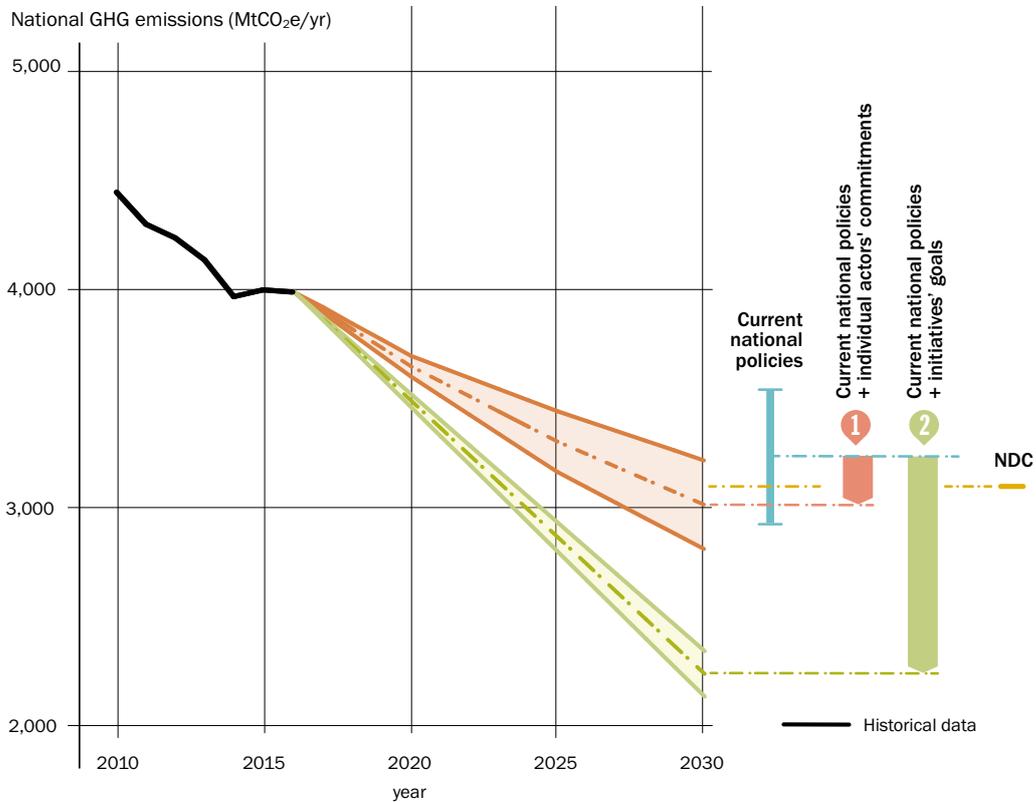
1 Quantifiable commitments to reduce GHG emissions typically include a specific emissions reduction goal, target year, baseline year, and baseline year emissions. See Technical Annex I for more details.

2 Companies' combined revenue reflects companies making quantifiable commitments to reduce GHG emissions, whose headquarters are in the EU, and whose revenue data is publicly available. See Technical Annex I for more details.

3 The world's largest companies are defined in terms of their inclusion in the 2019 Forbes 2000 and Global Fortune 500 lists.

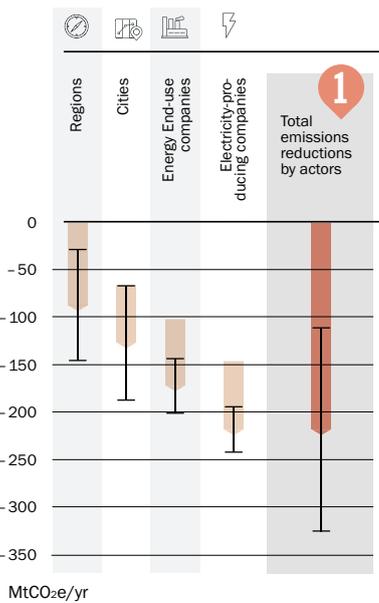
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**Figure 1.** Potential greenhouse gas (GHG) emissions reductions in the European Union resulting from the full implementation of individual subnational and non-state actor commitments and the full implementation of international cooperative initiatives (ICIs) goals compared to the “current national policies” scenario

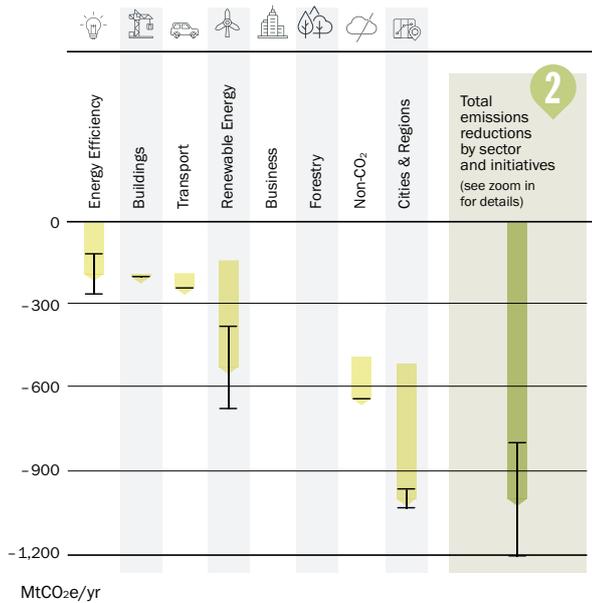


European Union

Emissions reduction potential of individual actors beyond current national policies, by actor group



Emissions reduction potential of international cooperative initiatives beyond current national policies, by sector



The „current national policies“ scenario (Kuramochi et al., 2018) includes land use, land-use change and forestry. Top panel: historical GHG emissions up to 2016 (with authors’ own estimates for years between the last inventory data year and 2016) and scenario emissions pathways up to 2030, alongside the NDC target emissions range (indicative target level for 2030). Emissions reduction target trajectories from individual actors’ commitments and initiatives’ goals are assumed to be achieved linearly from the latest historical data year and are presented here for illustrative purposes. Bottom-left panel: the breakdown of potential GHG emissions reductions from individual subnational and non-state actor commitments in 2030 by actor group. Bottom-right panel: the breakdown of potential GHG emissions reductions from ICIs in 2030 by sector. The results for “Current national policies plus initiatives’ goals” scenario do not include the potential emissions reductions from Science Based Targets, RE100 and Collaborative Climate Action Across the Air Transport World (CAATW); they are only quantified at a global level.

## ABOUT THIS FACT SHEET

The **Global Climate Action from Cities, Regions, and Businesses** country fact sheet series takes a close look at the potential impact of subnational and non-state climate change mitigation action for ten high-emitting economies.

In each fact sheet, we: (1) provide general information on the country's greenhouse (GHG) emissions and its energy and climate policies (the country context); (2) describe the interactions between the national government and subnational and non-state actors on climate action; (3) identify and map the type of GHG emissions reduction commitments made individually by cities, regions and companies within that country, as well as the actors making them; and (4) quantify the potential GHG emissions reduction impact that city, region and company commitments, as well as those of international cooperative initiatives (ICIs), could have on that country's emissions trajectory. The analytical steps follow those described in an earlier 2018 report (Data-Driven Yale, NewClimate Institute and PBL, 2018) and adopts the methodological recommendations made in Hsu et al. (2019). Detailed descriptions of this can be found in the main report and its Technical Annexes I and II, all of which can be downloaded from the NewClimate Institute website (<https://newclimate.org/publications>). A full list of references can also be found in the main report (Section 5).

Regarding the emissions data presented in this section, total national GHG emissions include land use, land use change and forestry (LULUCF) unless otherwise stated. The historical GHG emissions data are plotted up to 2016; for a number of UNFCCC non-Annex I countries, the values between the last inventory year and 2016 were estimated based on current policies scenario projections by NewClimate Institute, PBL and IIASA (Kuramochi et al., 2018). All GHG emissions figures presented are aggregated with 100-year global warming potential (GWP) values of the IPCC Fourth Assessment Report. For the NDC target emission levels, we used LULUCF sector emission levels projected under the current policies scenario when a country's NDC: (i) excludes LULUCF emissions, (ii) is not clear about the LULUCF accounting or (iii) considers LULUCF credits. For these countries, the NDC target emission levels may not match the official values reported by the national governments.

## ACKNOWLEDGEMENTS

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## SUGGESTED CITATION

NewClimate Institute, Data-Driven Lab, PBL Netherlands Environmental Assessment Agency, German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE), Blavatnik School of Government, University of Oxford. Global climate action from cities, regions and businesses: Impact of individual actors and cooperative initiatives on global and national emissions. 2019 edition. Research report prepared by the team of: Takeshi Kuramochi, Swithin Lui, Niklas Höhne, Sybrig Smit, Maria Jose de Villafranca Casas, Frederic Hans, Leonardo Nascimento, Paola Tanguy, Angel Hsu, Amy Weinfurter, Zhi Yi Yeo, Yunsoo Kim, Mia Raghavan, Claire Inciong Krummenacher, Yihao Xie, Mark Roelfsema, Sander Chan, Thomas Hale.