



BRAZIL  
**SUMMARY**  
BERLIN, 2018



**Author:** Magdala Arioli, Santhosh Kodukula,  
Shritu Shrestha, Stefan Werland

**Editor:** Oliver Lah

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# ABSTRACT

**T**his paper will help identifying policy measures in line with the New Urban Agenda and in the context of the Nationally Determined Contribution for Brazil. The paper briefly assesses current and planned mitigation actions for the urban transport, energy and resource management sectors. The paper identify relevant stakeholders and institutions focusing on one specific case study and outlines selected measures currently consideration in the city.







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# SUMMARY OF NATIONALLY DETERMINED CONTRIBUTIONS

In its NDC, Brazil commits to reduce greenhouse gas emissions by 37% below 2005 levels by 2025. The NDC also contains a subsequent indicative contribution to reduce greenhouse gas emissions by 43% below 2005 levels in 2030. Compared to the 1990 level this translates to 6% respectively 16% reduction. With this target Brazil is the first major developing country to commit to an absolute GHG reduction below 1990 levels. The target, however, will already be achieved by

the success in fighting deforestation over the past decade. Between 2005 and 2012, Land-Use, Land Use Change and Forestry (LULUCF) related emissions were reduced by over 86% (CAT, 2017, IPCC, 2014). Other sectors, such as energy, transport and industry will even be able to increase their emissions compared to 1990 levels without risking the achievement of the target (CAT, 2017).

## GHG REDUCTION TARGETS

From a GHG mitigation perspective Brazil's NDC target represents a very moderate contribution to global climate mitigation efforts and falls short of delivering on the overall goal of the Paris Agreement. Brazil's per capita emissions would increase further to an estimated 6.2 tCO<sub>2</sub>e by 2025 but then decrease to 5.4 by 2030.

The NDC's measures and targets give significant prominence to LULUCF:

- Energy mix: increasing the share of sustainable biofuels in the Brazilian energy mix to approximately 18% by 2030.

- Land use change and forests: strengthening policies and measures to avoid illegal deforestation and to achieve zero illegal deforestation in the Brazilian Amazonia by 2030; compensating for GHG emissions from legal suppression of deforestation; restoring and reforesting 12 million hectares of forests (not excluding exotic species); and enhancing sustainable forest management practices. A more ambitious reforestation target is set in the Native Vegetation Protection Act, which calls for the recovery of 20 million hectares of natural vegetation by 2036 (WRI 2015, Observatorio do Clima, 2016).



- Energy sector: achieving 45% of renewables in the energy mix by 2030. Again this impressive target proves much less challenging when compared to today's 40% renewable share; and achieving a 10% efficiency increase in the electricity sector by 2030; sourcing 23 per cent of power generation from renewable resources other than hydropower by 2030. Hydropower currently provides two thirds of the country's electricity (WRI 2015).
- Agriculture: strengthening the Low Carbon Emission Agriculture Program (ABC) as the main strategy for sustainable agriculture development.
- Industry: Promote new standards of clean technology and further enhance energy effi-

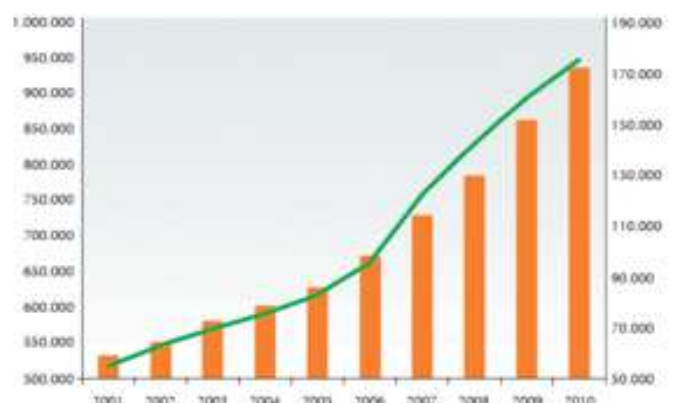
- ciency measures and low carbon infrastructure.
- Transportation: Promote efficiency measures, and improve infrastructure for individual transport and public transportation in urban areas.

Observers such as the Brazilian Observatorio do Clima, the World Resources Institute, or the NRDC claim that the deforestation targets are weaker than earlier national targets; that monitoring needs to be ensured (despite significant budget cuts to the environmental ministry); that forest degradation is increasing again in the most recent years; and that other sectors besides LULUCF are not adequately addressed (Observatorio do Clima, 2016, WRI 2015, NRDC, 2016).

## SUSTAINABLE URBAN BASIC SERVICES INITIATIVES CURRENTLY UNDER CONSIDERATION: BELO HORIZONTE

Considering the rather moderate ambition level of Brazil's NDC, local action in cities play a crucial role for climate change mitigation. Belo Horizonte is one example of an active mid-sized city committed to sustainable development. Belo Horizonte is the capital of the state of Minas Gerais and located in the southeastern region of Brazil. It is the third-largest metropolitan area in the country and has a population of over 2.4 million, with 5.7 million in the official Metropolitan Area (IBGE, 2014). Car and motorcycle ownership in Belo Horizonte has increased significantly in recent years as a side effect of growing welfare levels. Accordingly, the modal share in Belo Horizonte suffered significant changes in the last 17 years: The share of trips by private motor vehicles increased from 20,7% to 36,6% while public transport trips reduced from 44,6% to 28,1%.

Figure 1: Development of the number of cars and motorcycles in Belo Horizonte Source: PlanMob-BH





# LOCAL CLIMATE ACTION: BELO HORIZONTE

As the first city in Brazil, Belo Horizonte developed a Sustainable Urban Mobility Plan, called PlanMob-BH, in 2013. The plan consists of elements such as an integrated public transport network composed of metro lines and a bus rapid transit (BRT) system with exclusive bus corridors; a bikeway network with the installation of protected bike lanes and a public bicycle sharing system; and a pedestrian facilities network. The BRT system was expected to cut travel times significantly compared to the previous bus system and to provide a safe and comfortable inner city transport means (ITDP, 2014). The goals included in PlanMob-BH are:

- By 2020, the integrated mobility plan seeks reductions of 27% in GHG emissions, 23% in travel time and 18% in transport costs.
- By 2030, the plan's final year, the expected reductions would be 36% in GHG, 25% in travel time and 19% in transport costs.

- The net cumulative GHG emission savings over the 22-year period 2008-2030 are estimated at 9 MtCO<sub>2</sub>eq. Beyond the immediate mobility related issues, Belo Horizonte also recognises these measures as opportunity to revitalise the downtown area and enhancing living quality by creating pedestrianised streets and giving the space back to people from cars. The implementation of PlanMob-BH will be monitored and evaluated by the Urban Mobility Observatory which was established in 2013. The Observatory is composed of 63 institutions and collects and aggregates civil society's demands for improving mobility, defines performance indicators and prepares annual reports on the implementation of PlanMob-BH. In this process of institutionalizing climate change policies, Belo Horizonte set the goal of reducing 20% of GHG emissions by 2030 considering base year of 2007.



Figure 2: Urban furniture and horizontal signaling



Figure 3: Horizontal signaling for the Fahrradstraße

# MEASURES UNDER CONSIDERATION: LOW-SPEED ZONES AND CYCLING STREETS

The NDC submitted by Brazil is mostly based on emission reductions from halting deforestation which were already achieved during the last decades. Accordingly, other sectors such as transport are not affected by GHG emission reduction efforts. The low level of ambition on the national level accentuates the critical role of Brazilian cities to achieve ambitious GHG emission reductions. Belo Horizonte has witnessed a dramatic shift in its modal share with increasing use of cars at the expense of non-motorised and public transport modes. In order to strengthen these forms of mobility, the city introduced a sustainable urban mobility plan in 2013 that includes specific targets for transport related GHG emissions and the share of low carbon mobility.

As part of the SOLUTIONS project, Belo Horizonte established a partnership with Bremen, Germany. From this partnership, Belo Horizonte will imple

ment a Zone 30 and a bicycle street (Fahrradstraße). The main purpose of these measures is to increase the modal share of bicycle that currently only represents 0.4%. Belo Horizonte's Urban Mobility Plan has the goal to increase the bicycle trips to 6% by 2020. This measure will be a pilot-project and is part PEDALA BH programme. PEDALA BH aims at promoting the use of bicycles. Figure 2 illustrates the map of the current proposals of Zone 30, Fahrradstraßen, bike lanes and bike paths. Figure 3 is the pilot-project of Zone 30 and Fahrradstraßen. The Zone 30 pilot-project foresees a wide deployment of vertical and horizontal signaling, reallocation and repositioning of parking spaces to provide the reduction of the speed, and, enlargement of sidewalks with the creation of small areas of coexistence for pedestrians with the insertion of urban furniture. The Zone 30 pilot project will be implemented in 2017. Figure 4 and 5 illustrates how the pilot-project will look like.

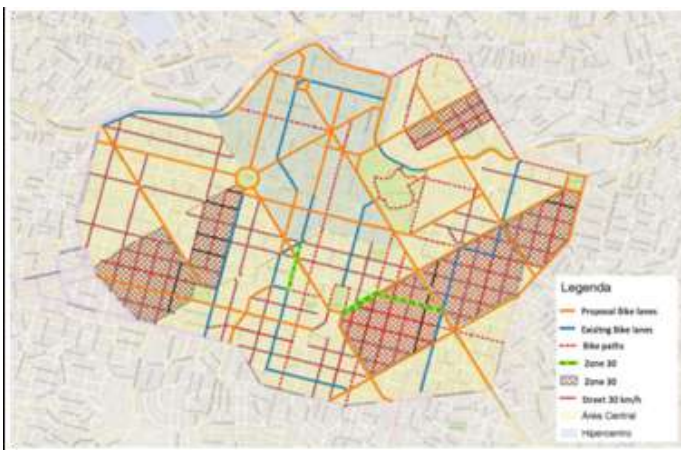


Figure 4: Current proposals for cycling network in Belo Horizonte



Figure 5: Proposal for pilot-project of Zone 30 and Fahrradstraßen





# CONCLUSION

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