American Steel Experts' Dialogue in the framework of the IEA Global Sustainable Technology Roadmap for Iron & Steel

SESSION 3: Low carbon policies & Low-carbon alternative technologies in iron & steel

Global overview

22 August 2018 – São Paulo, Brazil

MINISTÉRIO DO MEIO AMBIENTE

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Ministry of Environment

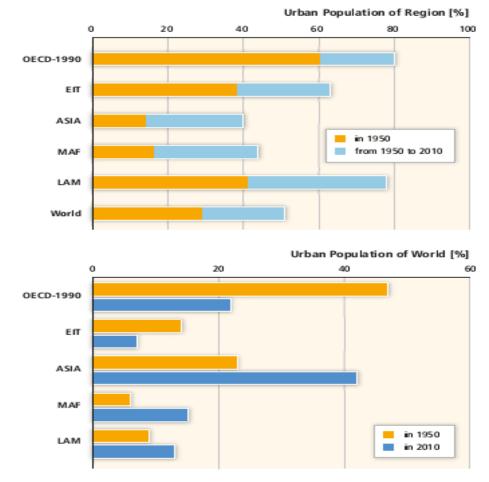
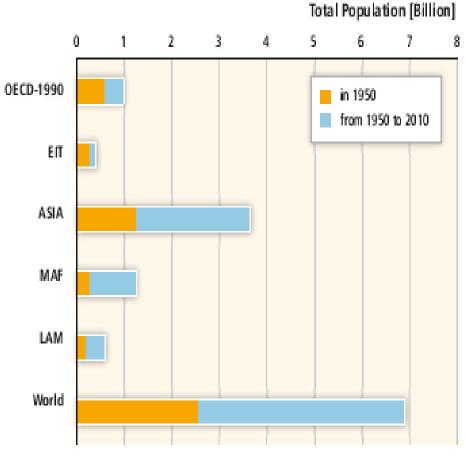


Figure 12.1 | Urban population as percentage of regional and world populations and in absolute numbers for RC5 regions (see Annex II.2), 1950–2010 Source: UN DESA (2012).

Iron &

Steel



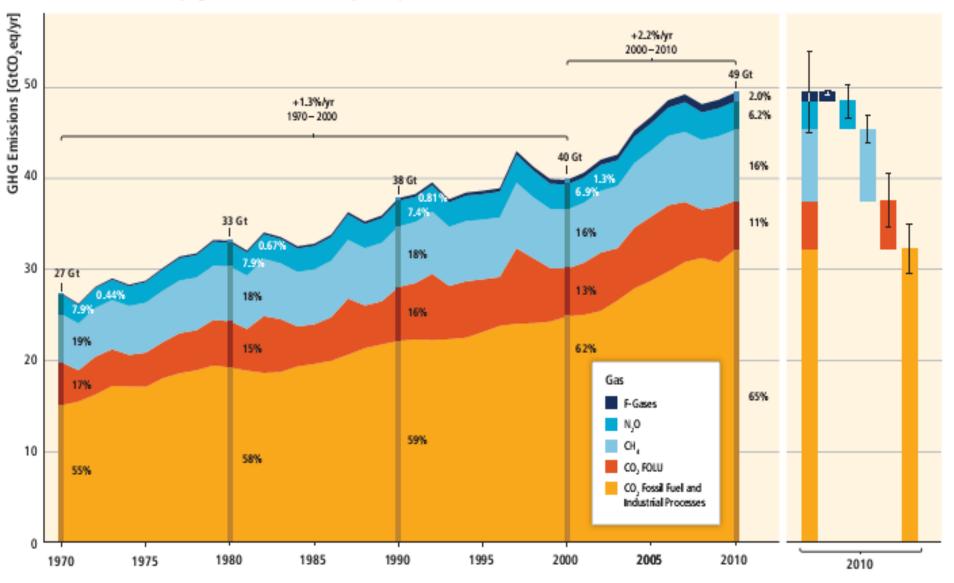
IPCC, 2014: Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Urban population increase



Infrastructure needs

Total Annual Anthropogenic GHG Emissions by Groups of Gases 1970–2010



IPCC, 2014: Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J. C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

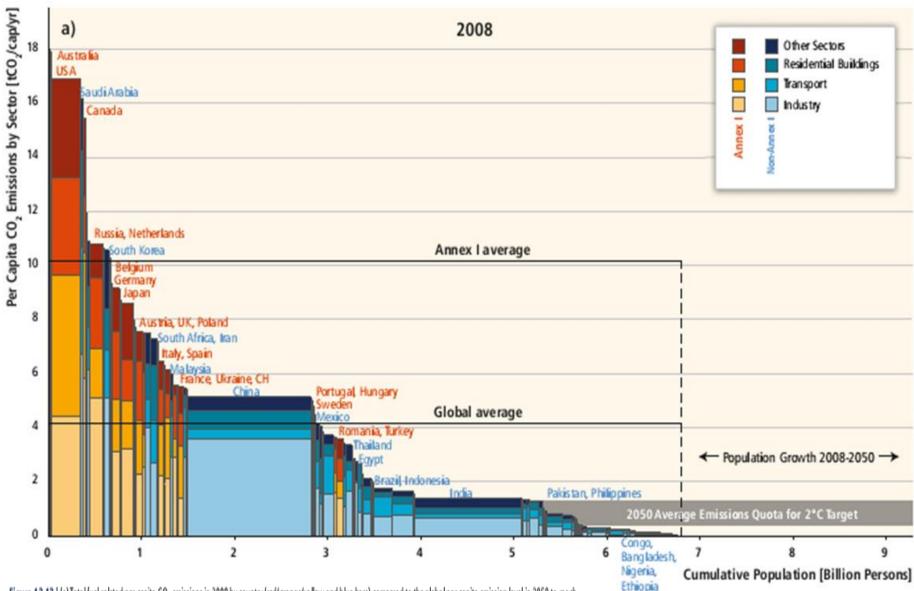


Figure 12.12 | (a) Total fuel-related per-capita CO₂ emissions in 2008 by country (red/orange/yellow and blue bars) compared to the global per-capita emission level in 2050 to reach the 2°C target with a 50–75% probability; (b) Carbon Replacement Value (CRV₂₀₀₈) per capita of existing stocks by country (red/orange and blue) and as yet unbuilt stocks if developing countries converge on the current average Amex I level (light yellow background area); (c) comparison with emission budget for the period 2000–2050 to reach the 2°C target with a 75% probability. Of this emission budget (1000 Gt CO₂), approximately 420 GtCO2 was already emitted during the period from 2000 to 2011. Source: Müller et al. (2013).

IPCC, 2014: Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adleç I. Baum, S. Brunneç P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

COP 21 (Paris Agreement)

Article 2.1

(a) Holding the increase in the <u>global average temperature</u> to well below $2^{\circ}C$ above pre-industrial levels and pursuing efforts to limit the temperature increase to <u>1.5°C</u>;

(b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; and

(c) Making <u>finance flows</u> consistent with a <u>pathway towards</u> low <u>greenhouse</u> <u>gas</u> <u>emissions</u> and <u>climate-resilient</u> <u>development</u>.

COP 21 (Paris Agreement)

All countries participate in mitigation by Nationally Determined Contributions (NDCs) (Art. 4.2)

- Shall pursue domestic mitigation measures

- NDCs are ratcheted upwards every 5 years (Art. 4.3, 4.9)

- Developed country Parties SHOULD continue taking the lead by undertaking economy- wide absolute emission reduction targets (Art. 4.4). Developing countries should "move over time" towards "economywide" reduction or limitation targets (Art. 4.4)



MITIGATION

Reference Point: 2005.

Greenhouse Gas Emissions Reduction	Greenhouse Gas Emissions Reduction
by 2025	by 2030
(Contribution)	(Subsequent indicative contribution)
37%	43%

Type: absolute target in relation to a base year.

Coverage: 100% of the territory, economy-wide, including CO₂, CH₄, N₂O, PFCs, HFCs, SF₆.

Metric: GWP-100 (IPCC AR5).



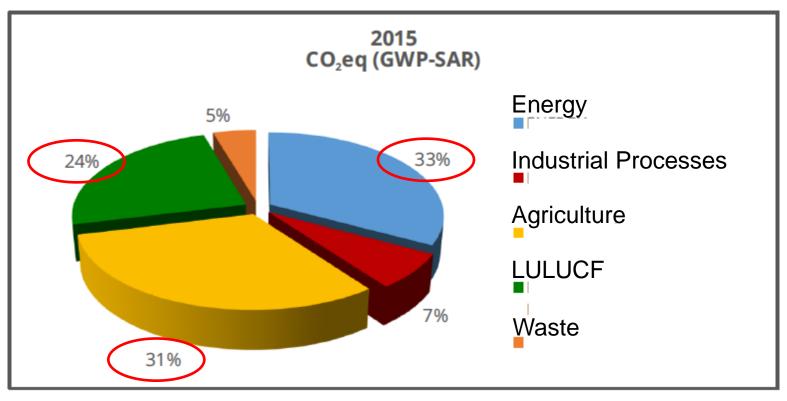
Brazil will reduce greenhouse gas emissions in the context of continued population and GDP growth, as well as income per capita increase, making therefore this contribution unequivocally very ambitious.

Brazil's population is projected to continue to grow until the 2040's, to approximately 230 million inhabitants.

Source: IBGE. *Projeção da População do Brasil por sexo e idade: 2000-2060.* August 2013. Available at http://www.ibge.gov.br/home/estatistica/populacao/projecao_da_populacao/2013/default.shtm, accessed on 2 September 2015.



Steel Industry is crucial to the Brazilian NDC implementation



Source: MCTIC (2018)