

## Decarbonisation, climate change, and human rights: a road map for the future of Puglia region



The Paris Agreement was signed on Dec 12, 2015, by 196 governments at the United Nations Framework Convention on Climate Change's 21st Conference of the Parties (COP21), with the objective of defining a new era in the global response to climate change. The agreement commits countries to protecting human health from the worst impacts of climate-altering emissions. After the Paris accord, WHO organised the Global Conference on Health and Climate at COP22 in Marrakesh and COP23 in Bonn to increase health resilience to climate risks and promote access to sustainable, safe, and clean energy and industrial production, with positive impacts on the health. Considering that more than 7 million deaths a year worldwide are attributed to air pollution, climate mitigation measures focused on air pollution are expected to have health co-benefits. Despite the evidence of effects of environmental risk factors on health, the necessary policies and investment required to address these challenges have not yet been clearly set out by individual governments and the European Union. Only 3% of health investments in developed countries is allocated to prevention, with 97% of the overall budget spent on treatment. As a result, the health-care costs arising from environment-related diseases are increasing: about 473 000 premature deaths are estimated to occur in Europe as a result of air pollution every year, with 23 000 premature deaths, 12 000 cases of chronic bronchitis, and 21 000 hospital admissions being attributable to coal plant emissions, resulting in a total cost of €62 billion.<sup>1-3</sup>

Small particulate pollution has health impacts even at very low concentrations. Thus, in accordance with the International Agency for Research on Cancer position on PM<sub>10</sub> and PM<sub>2.5</sub>, WHO guidelines call for the current limits to be cut by 50% because they have been shown to provide inadequate protection for public health.<sup>4-5</sup> Decarbonisation has been proposed as one of the most effective preventive policies that can be adopted by governments to protect citizens' health via environmental measures.

The *Lancet* Commission<sup>6</sup> called for a rapid exit from coal and for the transitional use of natural gas as part of medium-term steps towards the total conversion to

renewable sources of energy. According to the European Pollutant Release and Transfer Register, Puglia is the largest producer of polycyclic aromatic hydrocarbons of the 20 Italian regions (40 000 kg per year) and one of the biggest emitters of carbon dioxide in Europe (197 million tons per year).<sup>7</sup> These emissions are directly related to the presence of a coal-fired power plant in Brindisi and the steel plant in Taranto (10 million tons of carbon burnt each year). Additional problems have arisen in the city of Taranto because the steel production plant (much bigger than the city itself) is so close to inhabited areas that schoolchildren are legally obliged to remain in their homes on designated windy days to avoid potentially dangerous exposures to fine particulate matter carried by the wind from the steel plant.

The precautionary principle is detailed in Article 191 of the Treaty on the Functioning of the European Union. Its aim is to ensure a higher level of environmental and health protection through preventive decision-making in the case of risk. The Communication from the European Commission of Feb 2, 2000, on the precautionary principle established common guidelines including the need for adoption of the best available technologies.<sup>8</sup> Under the guidance of the WHO, Puglia region has decided to follow the 2015 recommendations of the *Lancet* Commission, promoting their application to energy and steel production. The recommendations call for a number of measures including a rapid phase-out of coal, the cautious transitional use of natural gas, and the need for a decisive policy package governing the transport, agriculture, and energy sectors in particular. Puglia's road map towards decarbonisation was illustrated at WHO sessions during both COP22 in Marrakesh and COP23 in Bonn. In the general frame of the adoption of a new Regional Energetic and Environmental Plan (PEAR) based on green energy, the Puglia road map includes the transitory conversion to natural gas of the aforementioned steel plant in Taranto, using gas already available (an amount of 1 billion m<sup>3</sup> to be ratified in the National Gas Plan and to the Italian managing body SNAM) or that provided by the Trans Adriatic Pipeline, which will cross the region. The conversion of the Taranto steel plant is enabled by

direct reduced iron-based technologies, an innovative steel production process that could gradually replace carbon with gas-powered furnaces.

Thus, the Puglia Regional Government has started a serious technical debate with national and international experts (ie, a knowledge transfer exchange), in which the decision-making process is based on scientific evidence and on the adoption of well-established best practices in the production of energy and steel. The path followed by the regional government is aimed at ensuring high environmental protection and health benefits, but also at restoring the human rights protected by the UN Convention on the Rights of the Child,<sup>9</sup> which are currently restricted in Taranto, especially during the windy days.<sup>10</sup> The European Union should adopt adequate regulations to support the economic sustainability of gas-powered steel production and foster rapid exit from carbon as set out by the Paris Agreement.

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