

The Energy Transition in an Era of Low Fossil Fuel Prices

The human influence on the climate system is clear and is evident from the increasing greenhouse gas concentrations in the atmosphere, positive radiative forcing, observed warming, and understanding of the climate system.

—Intergovernmental Panel on Climate Change, *Fifth Assessment Report* (2014)

The international response to climate change began in 1992 with the Rio Earth Summit and adoption of the Rio Convention that sets out the UN Framework on Climate Change (UNFCCC). The Rio Convention came into force in 1994 and has near-universal membership of 190 countries, and a Conference of Parties (COP) is held annually to review its implementation. One result of the 2015 Paris Climate Conference (COP21) was the Paris Agreement, which commits signatories to work toward limiting global temperature rise. Each country commits to reduce its greenhouse gas emissions by an amount referred to as its Intended Nationally Determined Contribution (INDC). The post-COP21 agenda focuses on implementation of these INDCs, at the heart of which is the so-called energy transition—the move away from using fossil fuels (petroleum products, natural gas, and coal) and toward using clean energies.

While the energy transition is arguably at an early stage, with important differences in goals and achievements across countries, what is not in question is that we are at a critical juncture. Indeed, to avoid the irreversible consequences of climate change induced by greenhouse gas emissions, the energy transition must take firm root while fossil fuel prices are low and likely to stay that way for some time. Solidifying the move from fossil fuels toward clean energy involves both significant opportunities and significant risks, which energy policies will need to address.

This chapter answers four key questions about the energy transition:

- What forces now affect fossil fuels?
- What is the state of clean energy?
- What are the opportunities and risks associated with the energy transition?
- What is the way forward?

Prepared by Rabah Arezki (team leader), Christian Bogmans, Rachel Yuting Fan, and Akito Matsumoto, with research assistance from Vanessa Diaz Montelongo.