

Economy Update

China for Energy Efficiency and Digitalization

2022 - 03 - 31

Global Transition



**UN CLIMATE
CHANGE
CONFERENCE
UK 2021**

IN PARTNERSHIP WITH ITALY



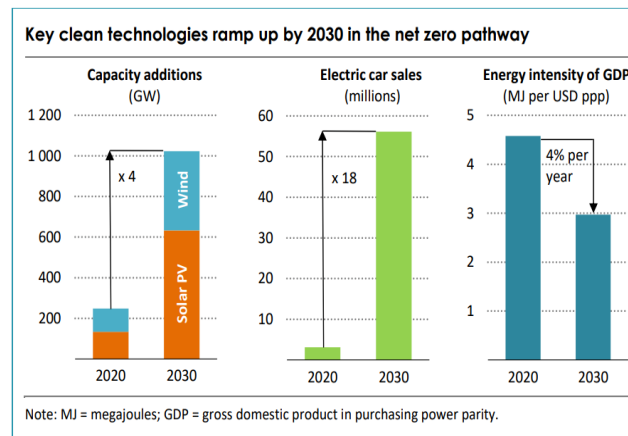
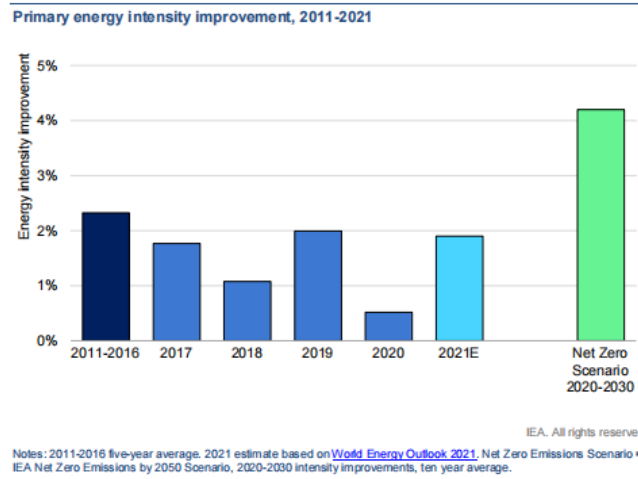
COP26 *Glasgow Climate Pact*

Calls on countries to speed up the transition to low-carbon energy systems, accelerate deployment of renewable energy.

GLOBAL Energy Efficiency



Energy Efficiency 2021



For Energy Efficiency:

Energy efficiency gains great prompt in 2021, but it would need to double to reach net zero emissions goal. The rate of improvement in energy efficiency should double from current levels to match the improvements in the Net Zero Emissions by Scenario proposed by IEA. Global energy intensity, as a key measure of the energy efficiency of an economy, is expected to increase 1.9% this year, compared with a 0.5% increase in 2020.

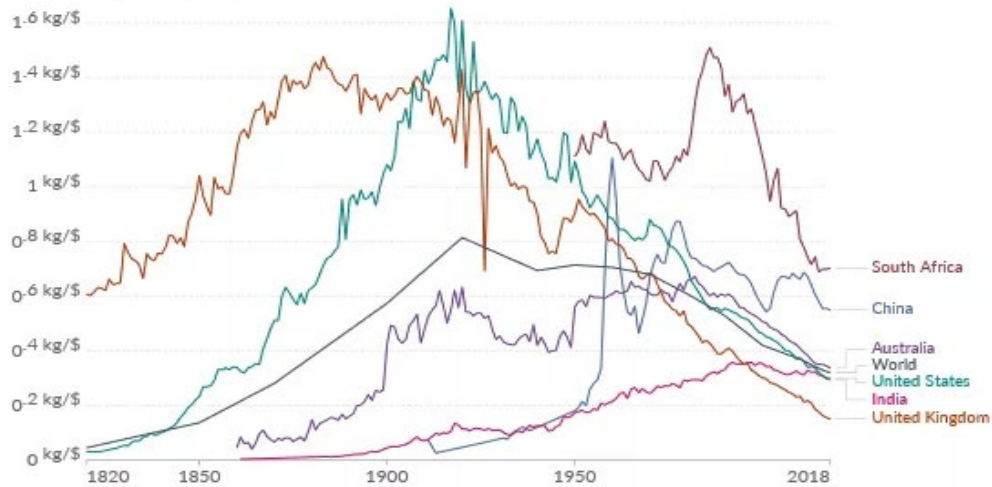
To reach net zero emissions of worldwide, global energy efficiency should increase by an average of 4% per year between now and 2030, about three times the average rate of improvement over the past 20 years.

CHINA Energy Efficiency

Carbon emission intensity of economies

Carbon dioxide (CO₂) intensity of economies measured in kilograms of CO₂ per \$ of GDP (measured in international-\$ in 2011 prices).

Our World
in Data



Source: Our World in Data based on the Global Carbon Project and Maddison Project Database 2020 (Bolt and van Zanden (2020))
OurWorldInData.org/co2-and-other-greenhouse-gas-emissions/ • CC BY

In 2020, China's carbon emission intensity dropped 48.4% from 2005, exceeding China's commitment to the international community to reduce by 40 to 45 percent by 2020, with a cumulative reduction of about 5.8 billion tons of carbon dioxide.

However, China's energy efficiency level is still relatively low, about 1.7 times less than the level of advanced economies, so China still has great potential.

- Stress
- Potential

Update in Policies 1



14th Five-Year Plan(2021-2025),

Energy efficiency should be largely improved in key industries, strict controls will be placed upon coal consumption growth, construction of new electric power systems based upon new energy resources will speed up, new progress will be made and broad application of green and low-carbon technologies, environment-friendly production modes and living patterns will become widespread, and further improvement will be made in the policy framework for green, low-carbon and circular development.

By 2025, the share of non-fossil fuels in total energy consumption will reach around 20%, while energy consumption and carbon dioxide emissions per unit of GDP will drop by 13.5% and 18%, respectively, compared with 2020 levels, laying a solid foundation for carbon dioxide peaking.

15th Five-Year Plan(2026-2030),

the share of non-fossil energy consumption will reach around 25%, and carbon dioxide emissions per unit of GDP will have dropped by more than 65% compared with the 2005 level, successfully achieving carbon dioxide peaking before 2030.

Update in Policies 2



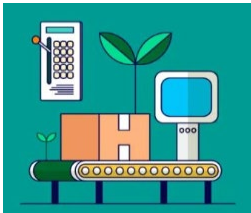
13.5% reduction in energy consumption per unit of GDP in 2025 compared with 2020.

It also calls for better policies and mechanisms for energy conservation and emission reduction, basically reaching international advanced levels of energy efficiency and emission control of major pollutants in key industries, and notable progress in the green transformation of economic and social development.

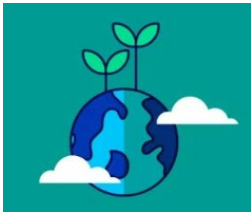
CHINA EE Priority



- ▶ Standard: Energy efficiency and energy consumption

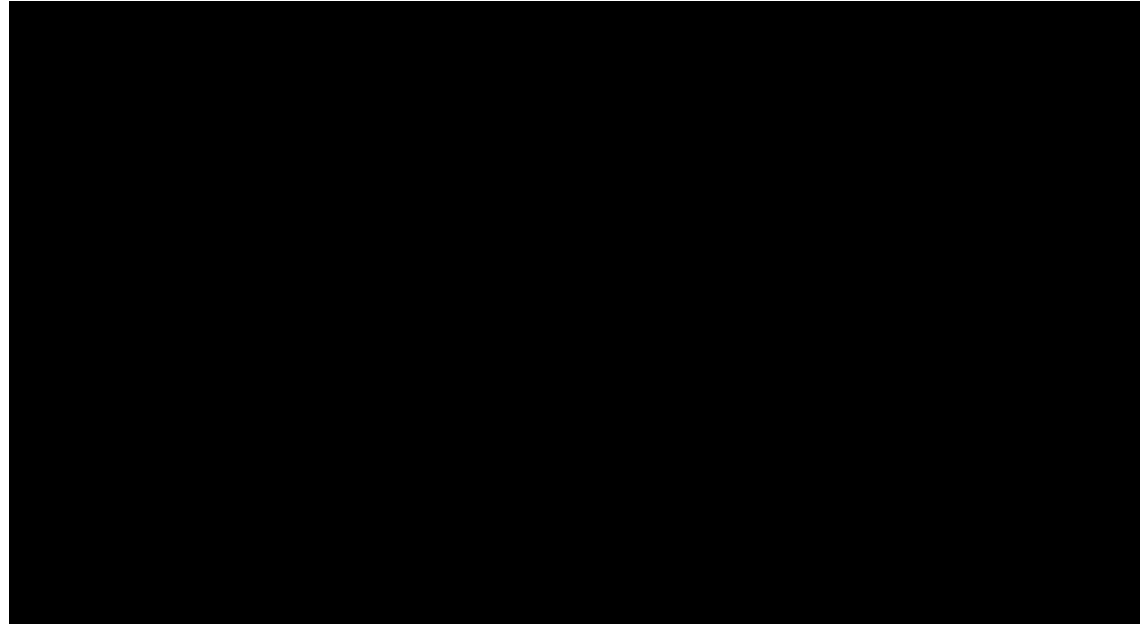


- ▶ Technology: Digitalization



- ▶ Tasks: Implement the action for green and low-carbon energy transition, the action for energy saving, carbon emission mitigation and efficiency improvement, the action for peaking carbon dioxide emissions in industry sector, the action for peaking carbon dioxide emissions in urban-rural development area, the action for promoting green and low-carbon transportation, the action for promoting circular economy in carbon mitigation purpose, the action for advancing green and low-carbon technology innovation, the action for consolidating and enhancing carbon sink, the action for green and low-carbon society.

WHY Digitalize



- Digitalization drives energy efficiency;
- Digitalization promotes the intelligent level of electrification;
- Digitalization breaks industry boundaries and forms a new resource utilization model.

EE with Digitalize

- ▶ **Transportation:** Digitalization helps improve energy efficiency and reduce maintenance costs. ACES (Autonomous, Connected, Electric and Shared) technologies will have a profound impact on future energy consumption and carbon emissions in the transportation industry.
- ▶ **Buildings:** Smart building technologies, including smart thermostats and lighting, are expected to significantly reduce energy consumption in residential and commercial buildings in 2017-2040. Cumulative energy conservation are expected to reach 65 trillion KWH by 2040.
- ▶ **Industry:** Advanced process control, combined with intelligent sensors and data analysis will be used to predict equipment failure, to achieve the purpose of energy conservation and consumption reduction. Technologies such as industrial robots and 3D printing are becoming standard in some industries, helping improve manufacturing accuracy and reduce the generation of industrial waste.
- ▶ **Electric power:** Digitalization can reduce power system costs in four ways: saving operation and maintenance costs; improving power generation and grid efficiency; reducing unexpected downtime; and extending the service life of the facilities. Digitalization could reduce the annual cost of electricity generation by USD 80 billion between 2016 and 2040, or 5% of the global total.

Thoughts

- ▶ Digitalization will play an important role in energy transition, helping countries optimize energy efficiency and accelerate uptake of renewable energy. Digitalization is driving a transition towards a cleaner, connected and data-driven world by optimizing energy efficiency, reducing emissions, improving resiliency and reliability, improving interoperability, minimizing operating costs, and providing other benefits to serve the needs of stakeholders. To realize these benefits, governments around the world are supporting digitalization of systems that supply and use energy, such as buildings, industry, and electricity networks, outlining aggressive visions and roadmaps, as well as policies to support them.
- ▶ Recognising the clear benefits to economies of augmenting their individual efforts through international collaboration
- ▶ We expect a closer cooperation relationship at the APEC platform that would promote exchanges on digitalization and improve energy efficiency, especially in buildings and industry.

Thank you!
