



Harnessing Hydropower for Green, Low-carbon Development

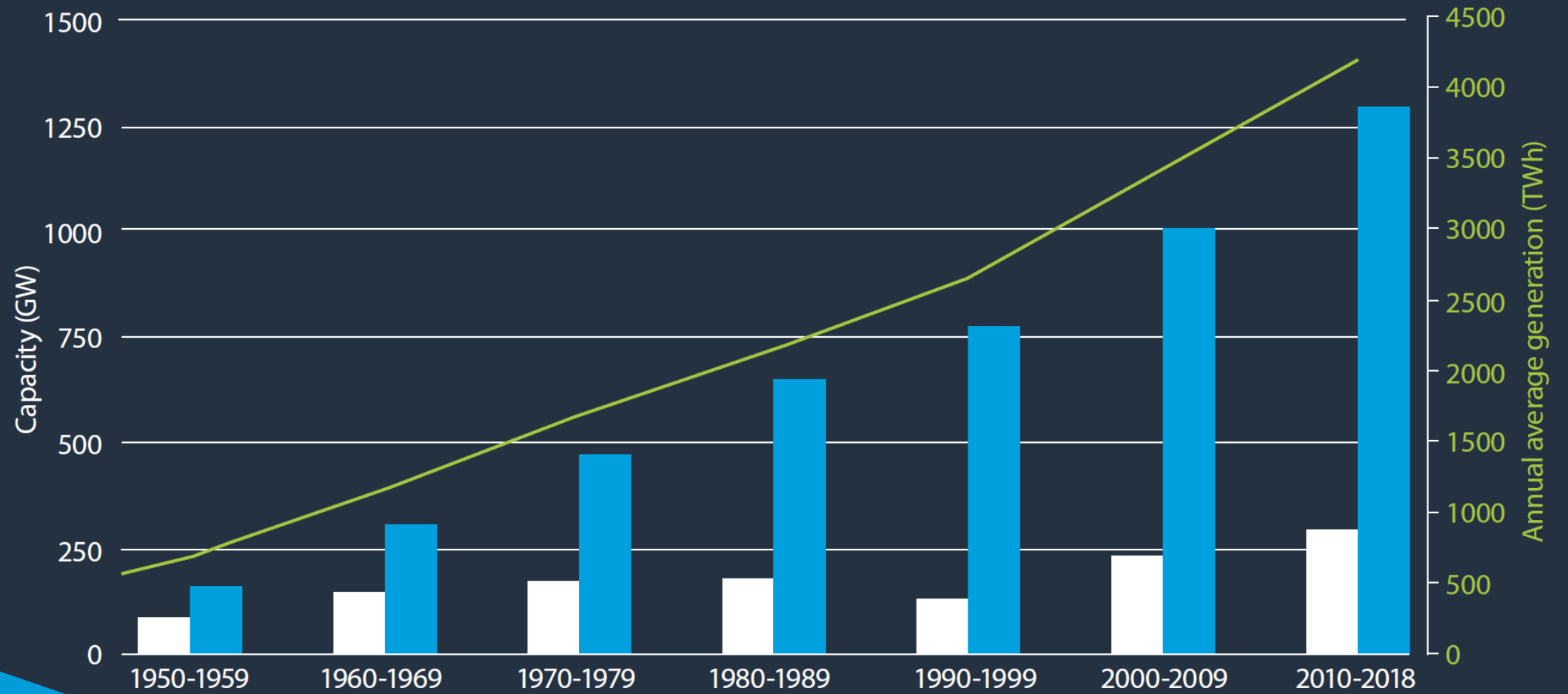
Eddie Rich

Chief Executive
International Hydropower Association

6 November

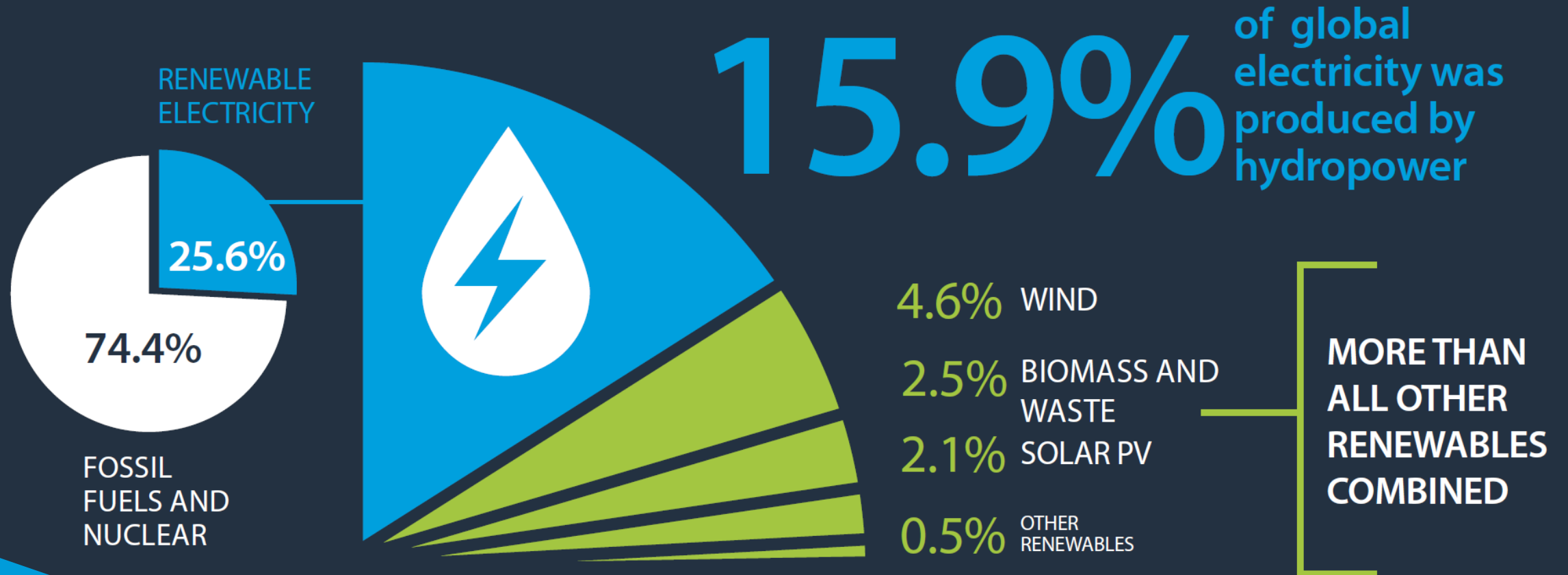


HYDROPOWER GROWTH IN DECADES





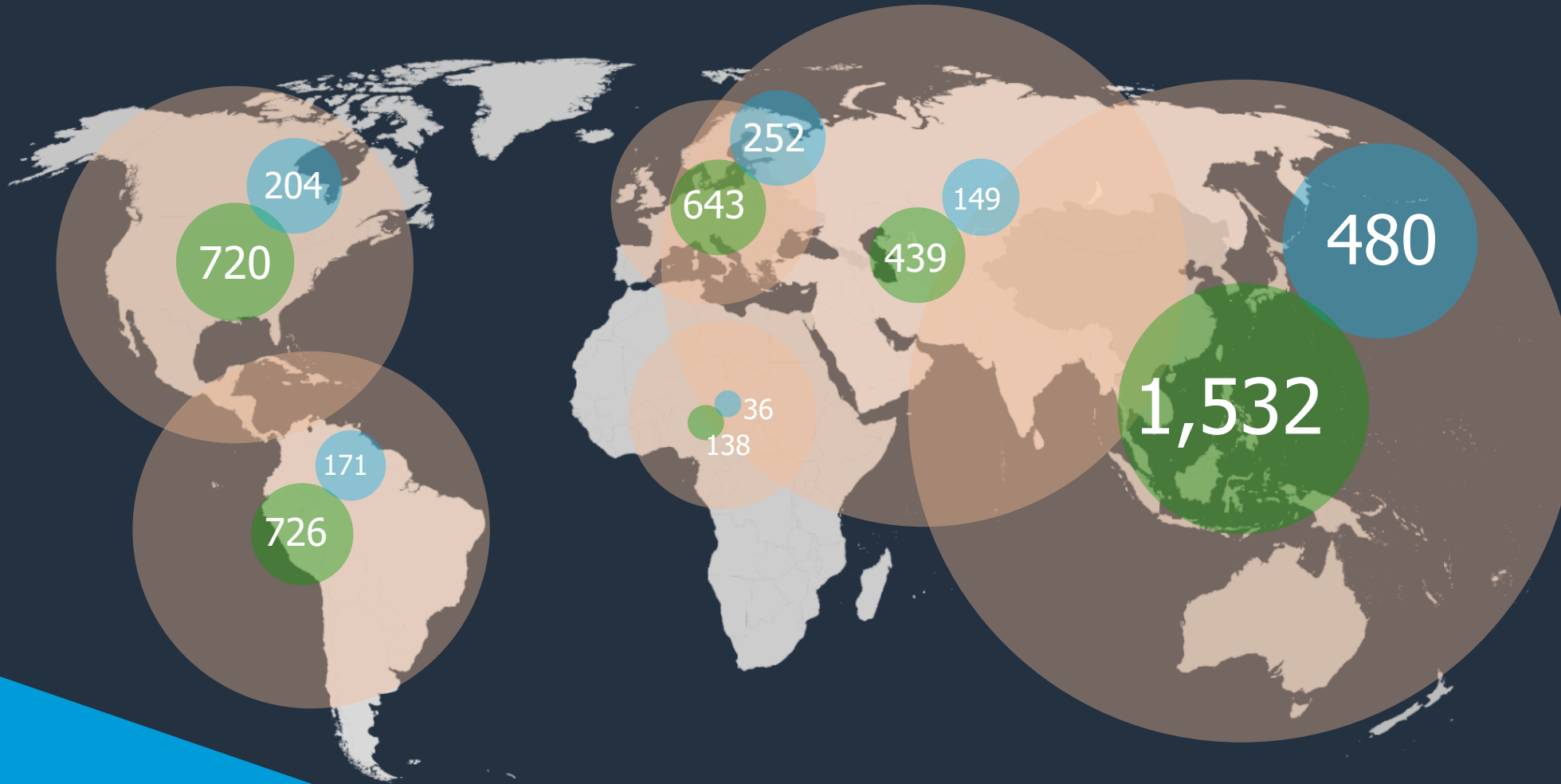
ELECTRICITY GENERATION



Source: IEA 2019



HYDROPOWER: GLOBAL OVERVIEW



**1,292G
W**

Global hydropower installed capacity in 2018

**4,200TW
h**

Estimated electricity generated from hydropower in 2018

**160.3G
W**

Global pumped storage installed capacity in 2018

China 8.54 GW

Brazil 3.87 GW

Pakistan 2.49 GW

Turkey 1.09 GW

Added in 2018



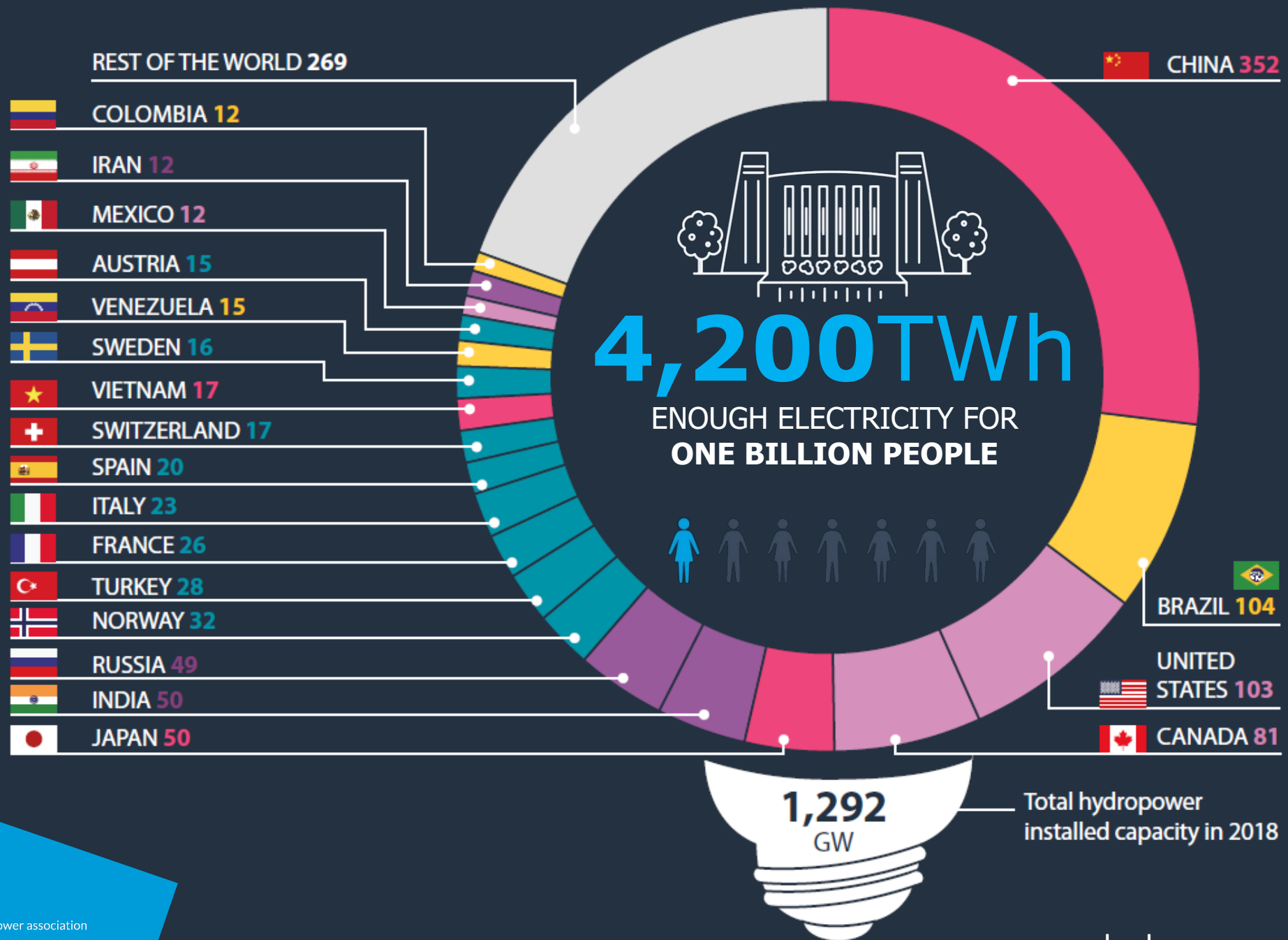
Installed capacity
In 2018 in MW



Estimated generation
In 2018 in TWh/year



Technical potential
Assuming maximum generation





GREEN, LOW-CARBON DEVELOPMENT

Using hydropower instead of coal each year avoids:

148 million tonnes of particulates **62** million tonnes of sulphur dioxide **8** million tonnes of nitrogen oxide

If hydropower was replaced with burning coal, up to

4 BILLION TONNES

of additional greenhouse gases would be emitted per year

and global emissions from fossil fuels and industry would be at least

10% HIGHER

PM2.5
PM10

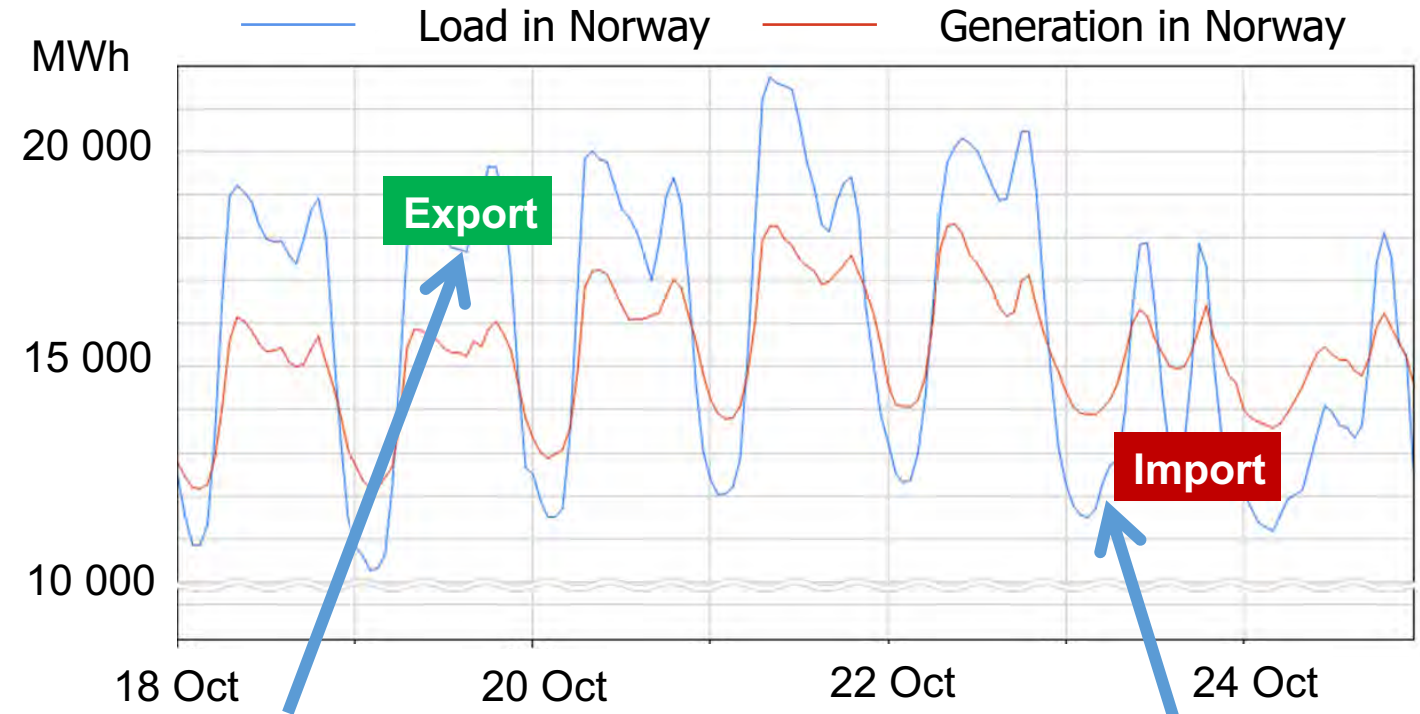
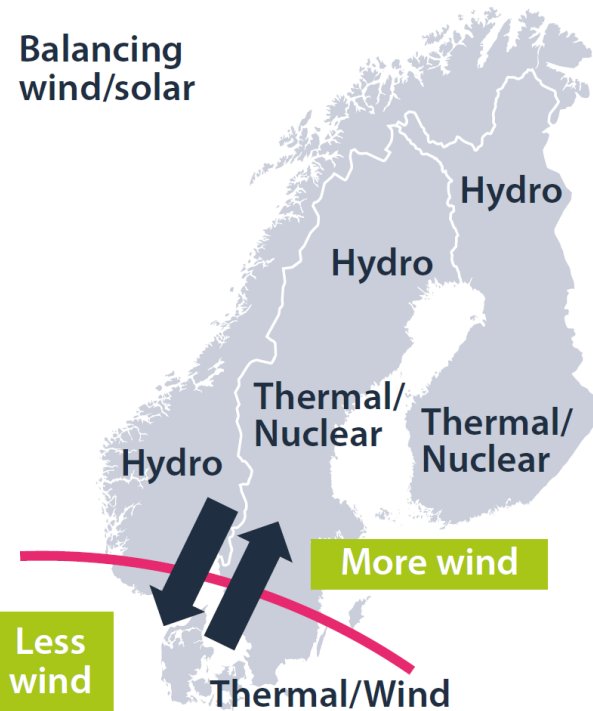


SOx NOx



HYDROPOWER & INTERCONNECTION

Nord Pool:
Norwegian hydro and Danish wind



Norwegian hydro exporting



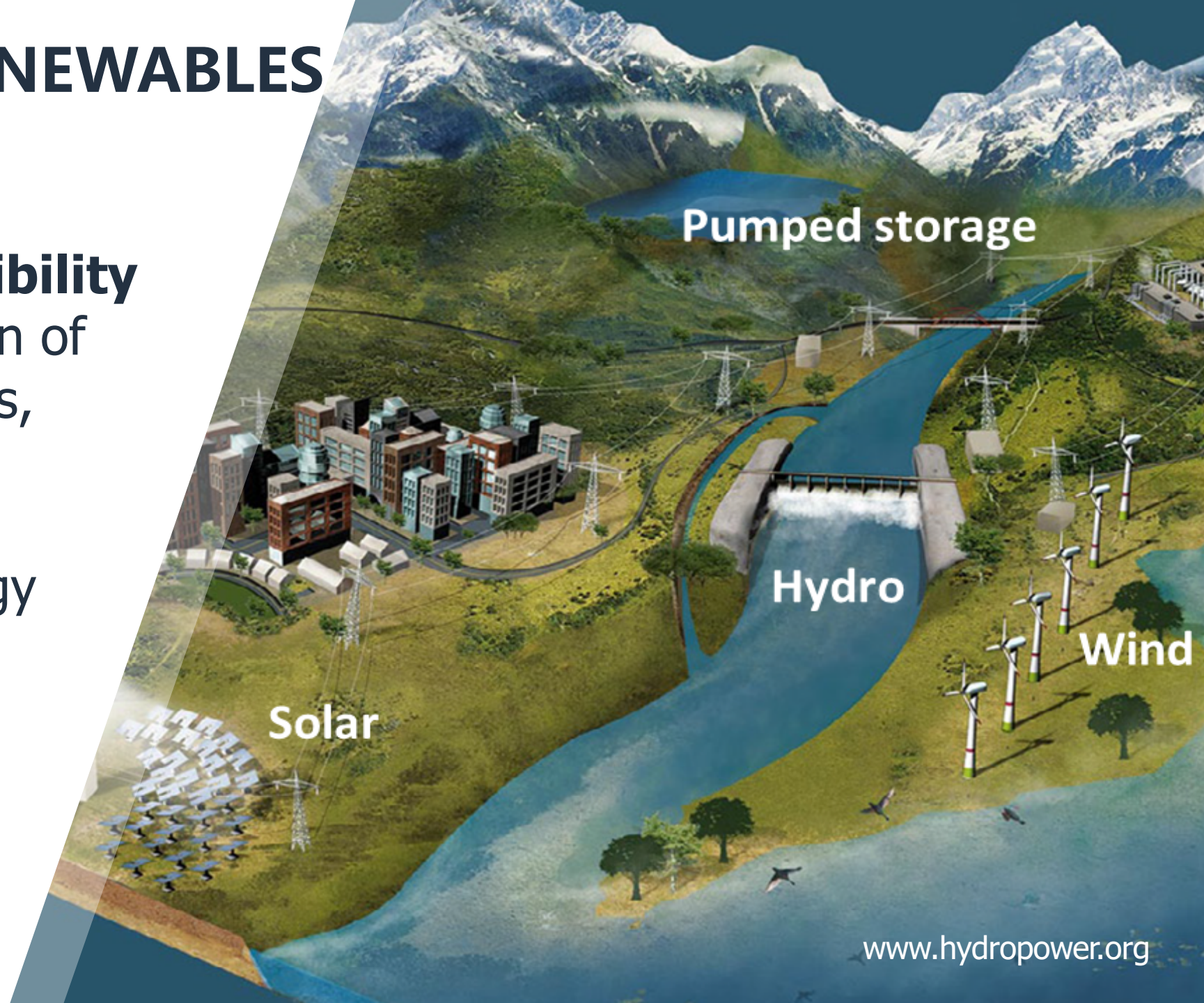
Danish wind cover underproduction





ENABLING RENEWABLES INTEGRATION

Hydropower's **flexibility** supports integration of variable renewables, creating **reliable**, **affordable** and **sustainable** energy systems.





HYDROPOWER DEVELOPMENT IN CHINA

380GW

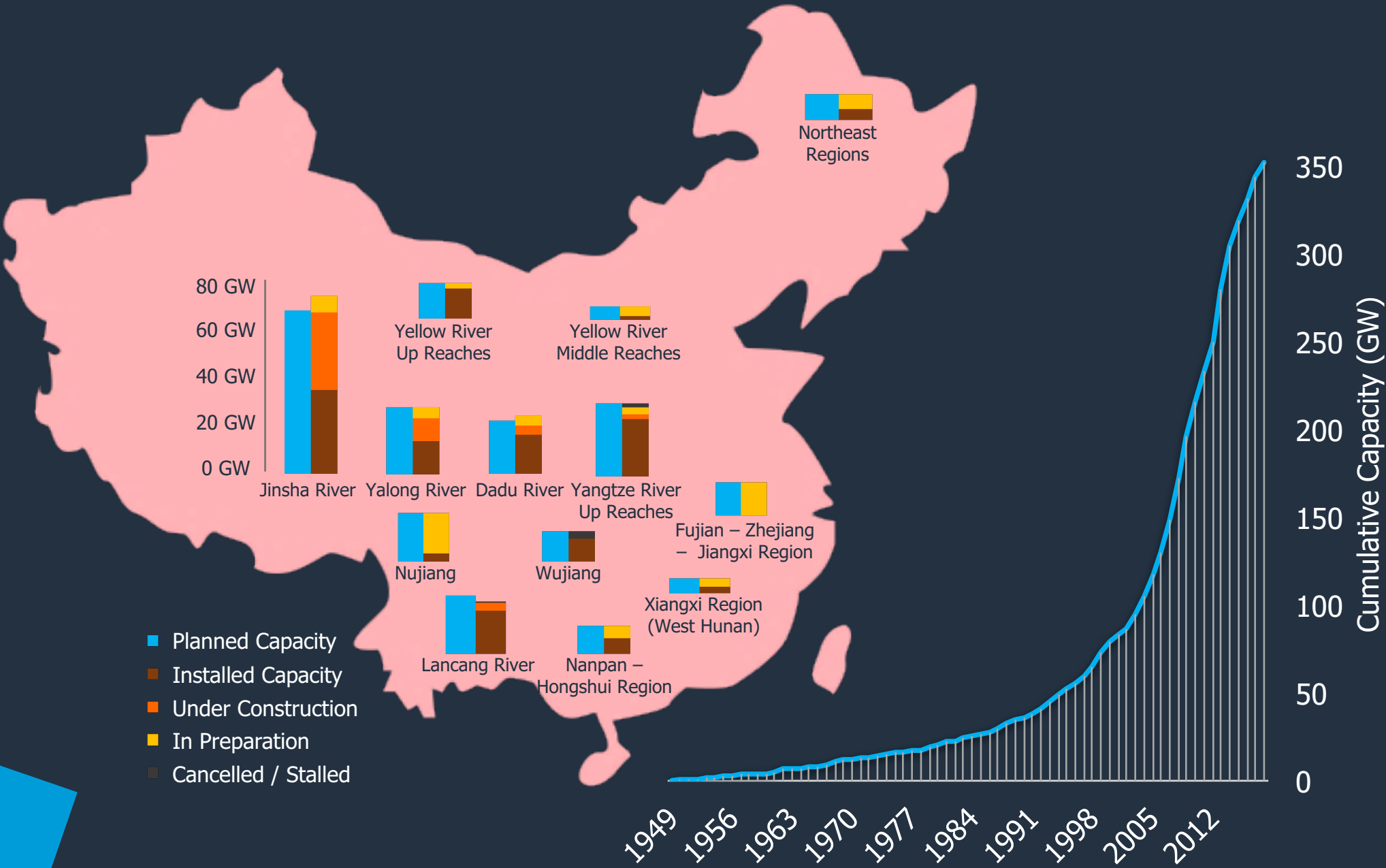
Target capacity by 2020

352GW

Total installed capacity in 2018

54.4GW

Under construction





HYDROPOWER IN AFRICA

40GW

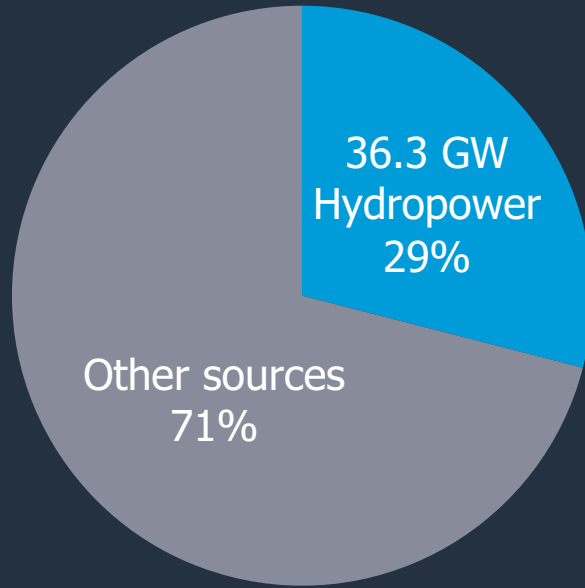
Expected capacity by 2020

36.3GW

Total installed capacity
in 2018

89%

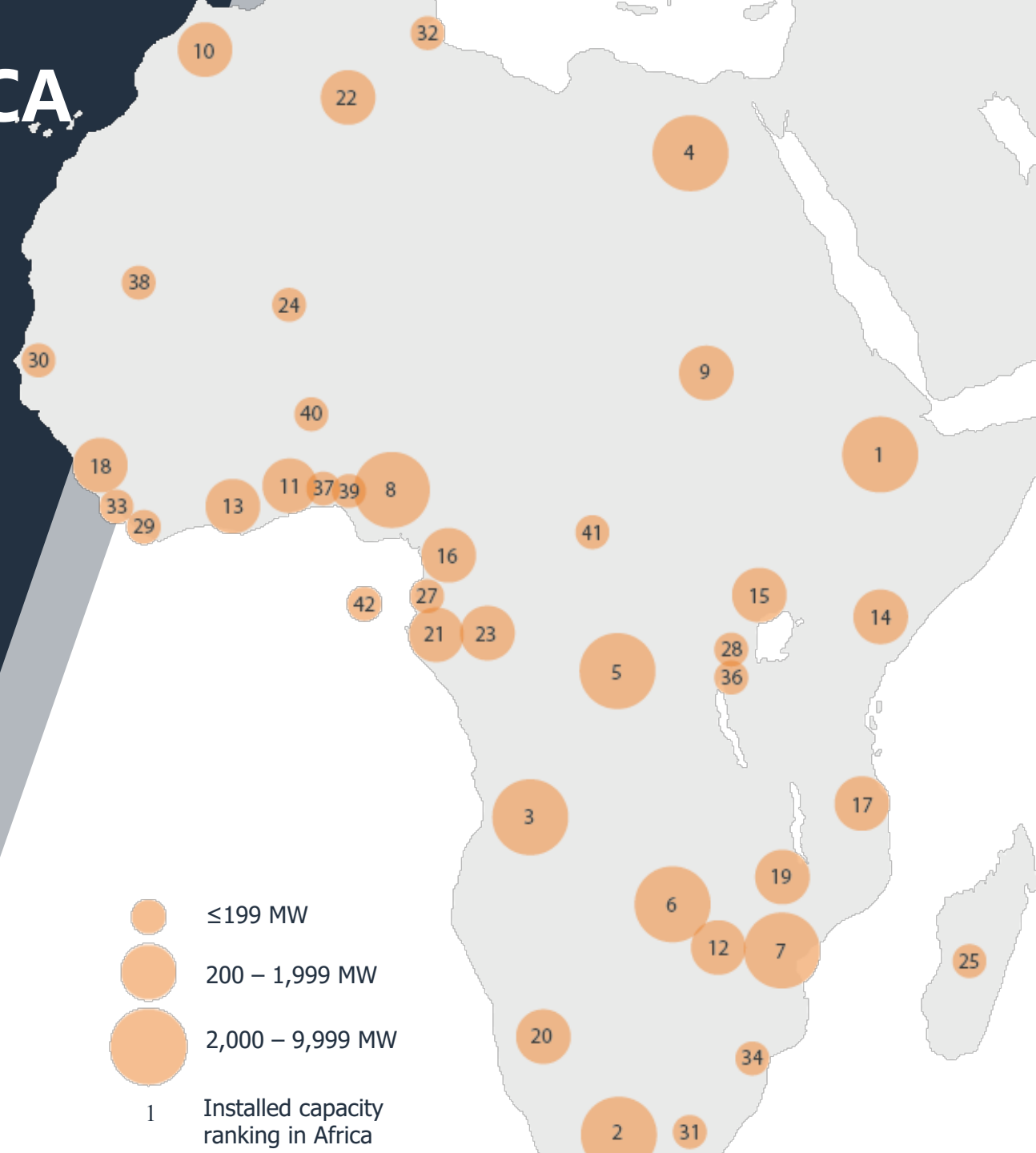
untapped
hydropower potential



50% of population without
electricity access

33% of population without access
to drinking water services

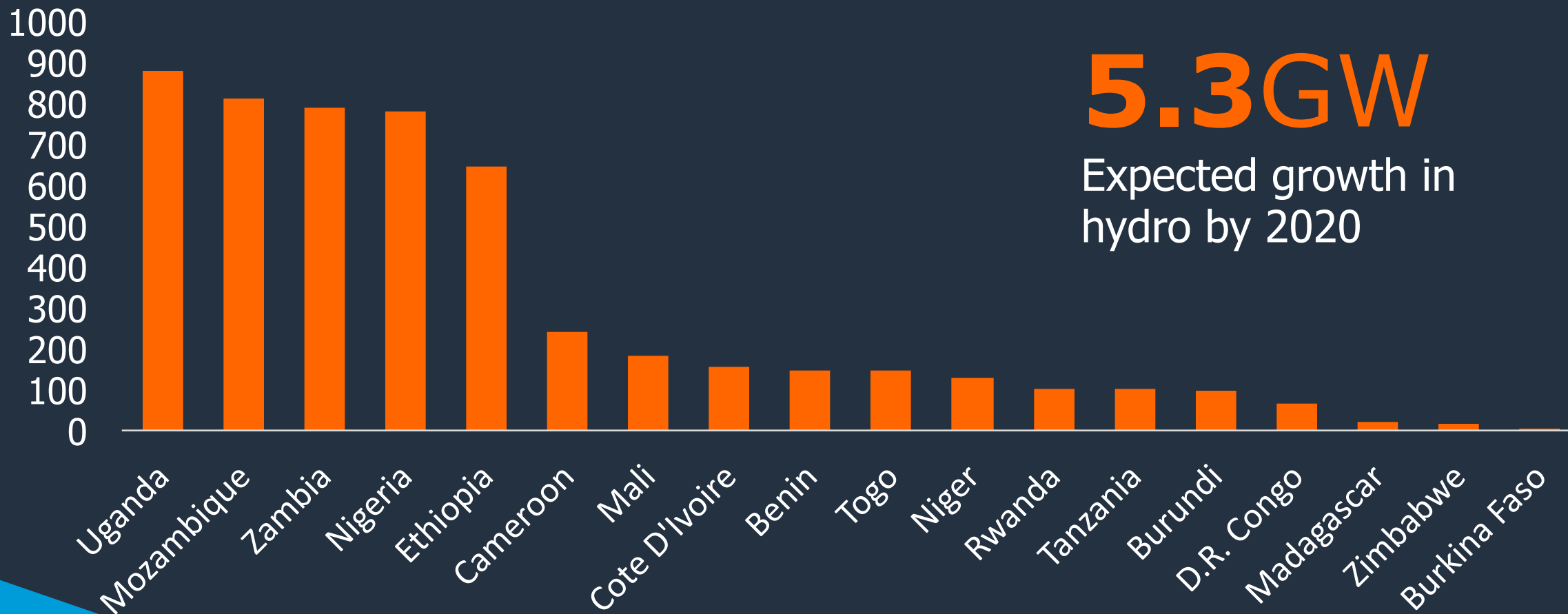
Source: World Bank





HYDROPOWER DEVELOPMENT IN AFRICA

Expected increase in hydropower installed capacity by 2020 in MW



Our mission

advancing
sustainable
hydropower.



OUR MEMBERS

Global Players



Regional Players



Research & Non-profit



Utilities & IPPs



Consultancies





OUR PARTNERS

Finance & development



Research & academia



NGOs



International organisations



Governmental entities





TRAININGS & TOOLS





EVENTS & PLATFORMS

in preparation for the
world hydropower congress

EN 

Beijing forum on hydropower & future energy systems

Delivering on the Paris Agreement
and the Sustainable Development Goals

21-22 May 2018 • Beijing

Organiser  Partners 



Thank you

You can also become an IHA member:
<https://www.hydropower.org/join>

To learn more about sustainability tools, visit:
www.hydrosustainability.org