




JOINT WORKING COMMITTEES MEETING
«Industry, Innovations and Prospective Development»
«Ecology and Healthcare»

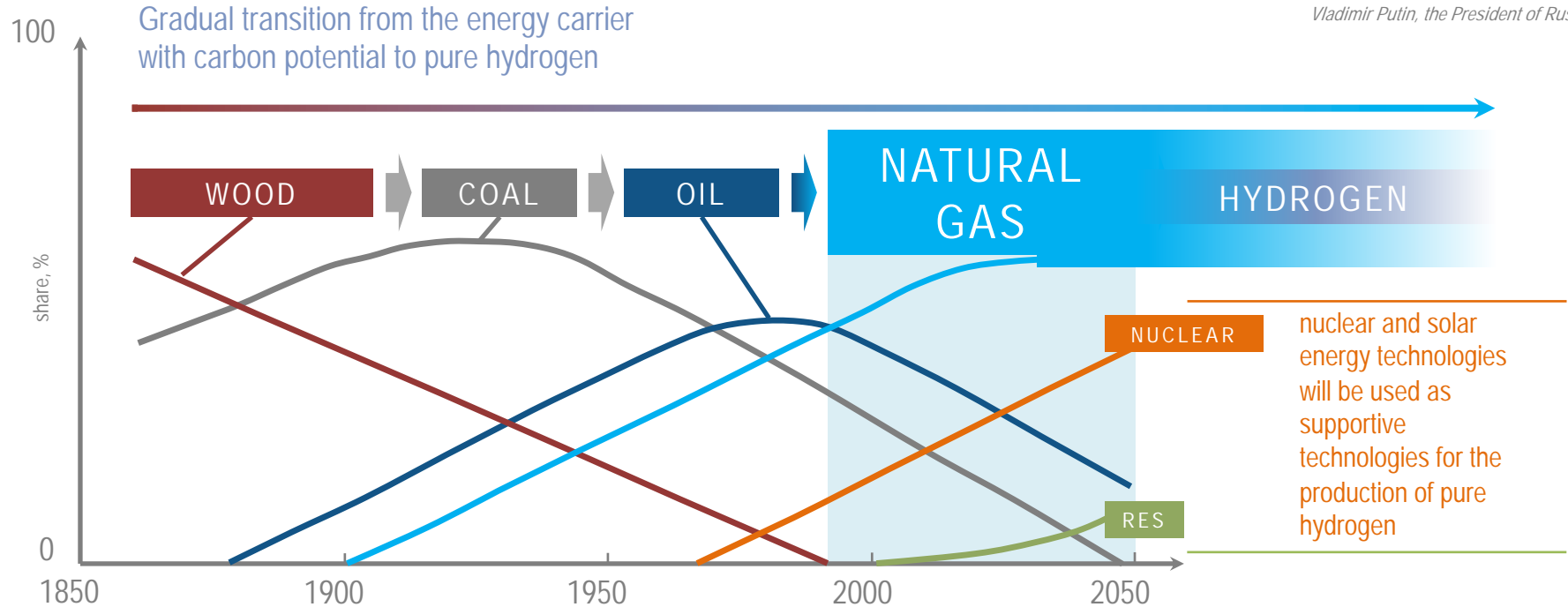
A photograph showing a helicopter performing maintenance on a wind turbine. The helicopter is suspended in the air, with a basket hanging from its hoist. The basket is positioned near the hub of the wind turbine, which is partially visible on the left side of the frame. The background is a clear, light blue sky.

Ensuring
energy security
during Energy
Transition

Dr. Oleg Aksyutin
Deputy Chairman of the Management Committee – Head of Department, Gazprom,
Chairman of IBC INIDEP Working Committee

The epoch of natural gas

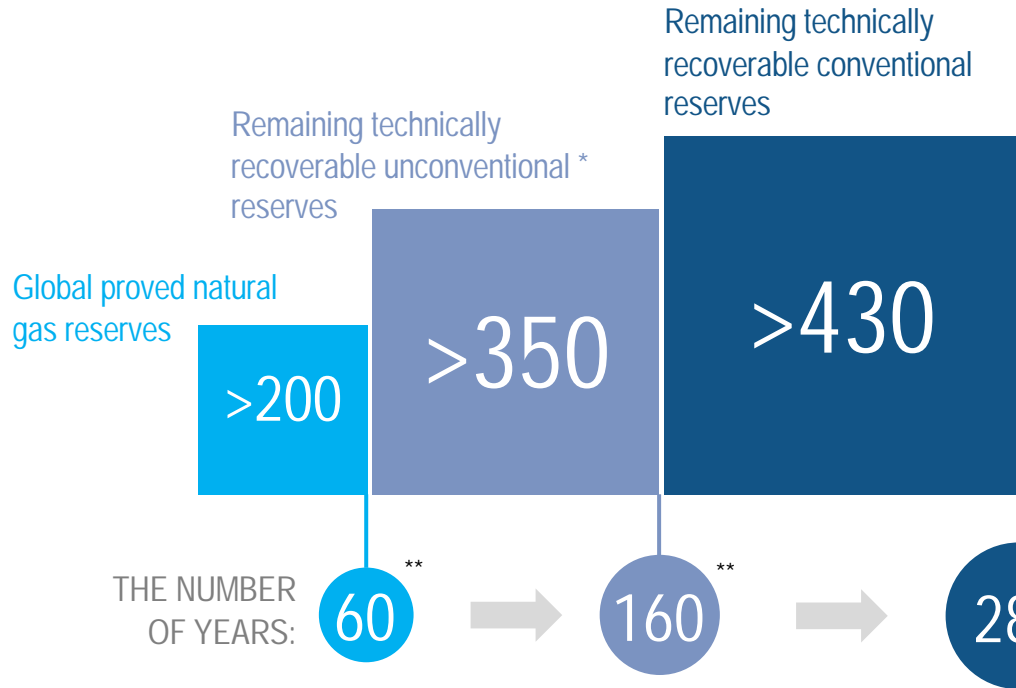
«We are certainly thinking and will implement hydrogen energy projects in practical terms»
 Vladimir Putin, the President of Russia



The dominance of certain energy carriers types during different periods in the development of human society

Source: IHHX PAH

Global gas reserves



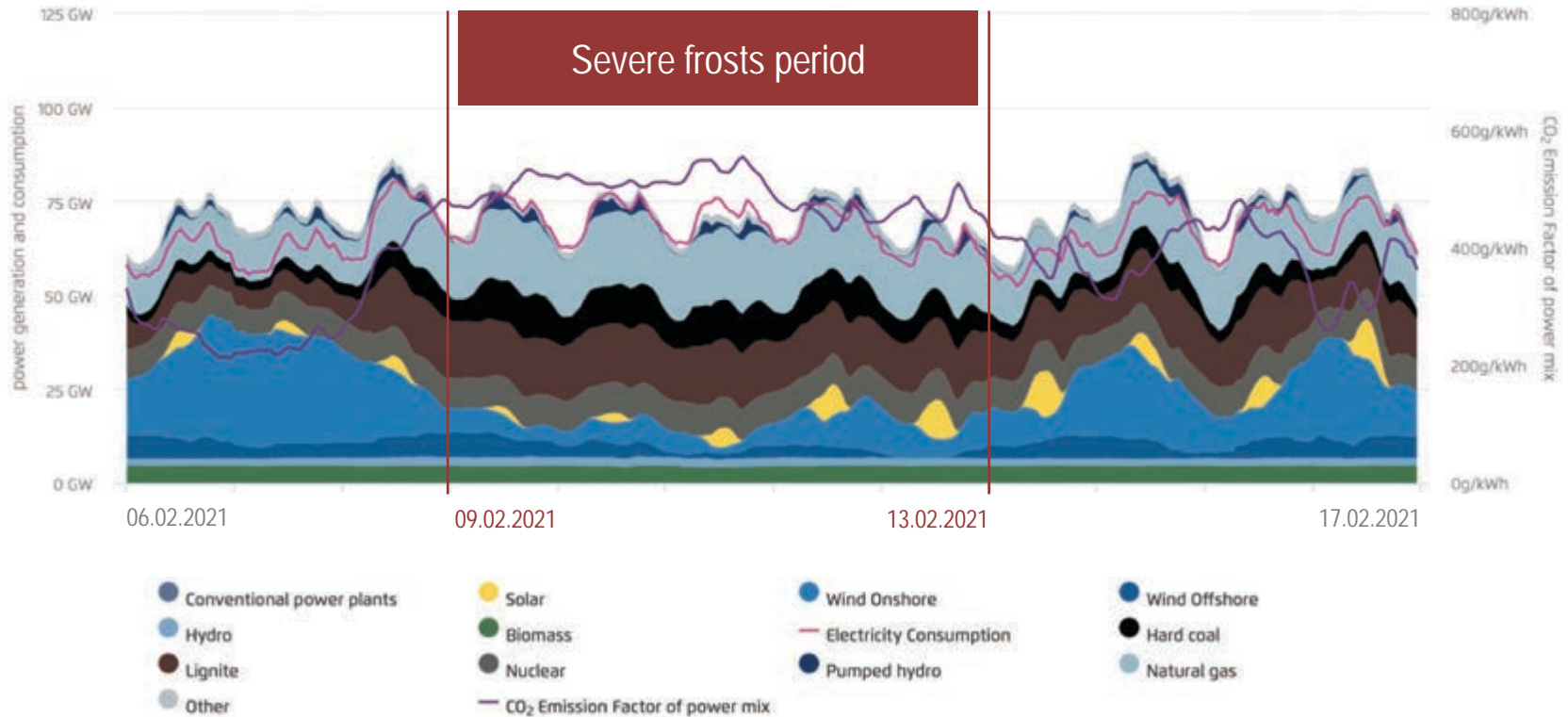
OCEAN HYDRATES
ALONE MAY CONTAIN UP TO
120 000
TCM OF METHANE,
+
~**740** TCM OF METHANE
IN METHANE HYDRATES
ON THE CONTINENTS

Source: Resources to Reserves, 2012 (International Energy Agency)

more than **30** thousand years

A friend in need is a friend indeed

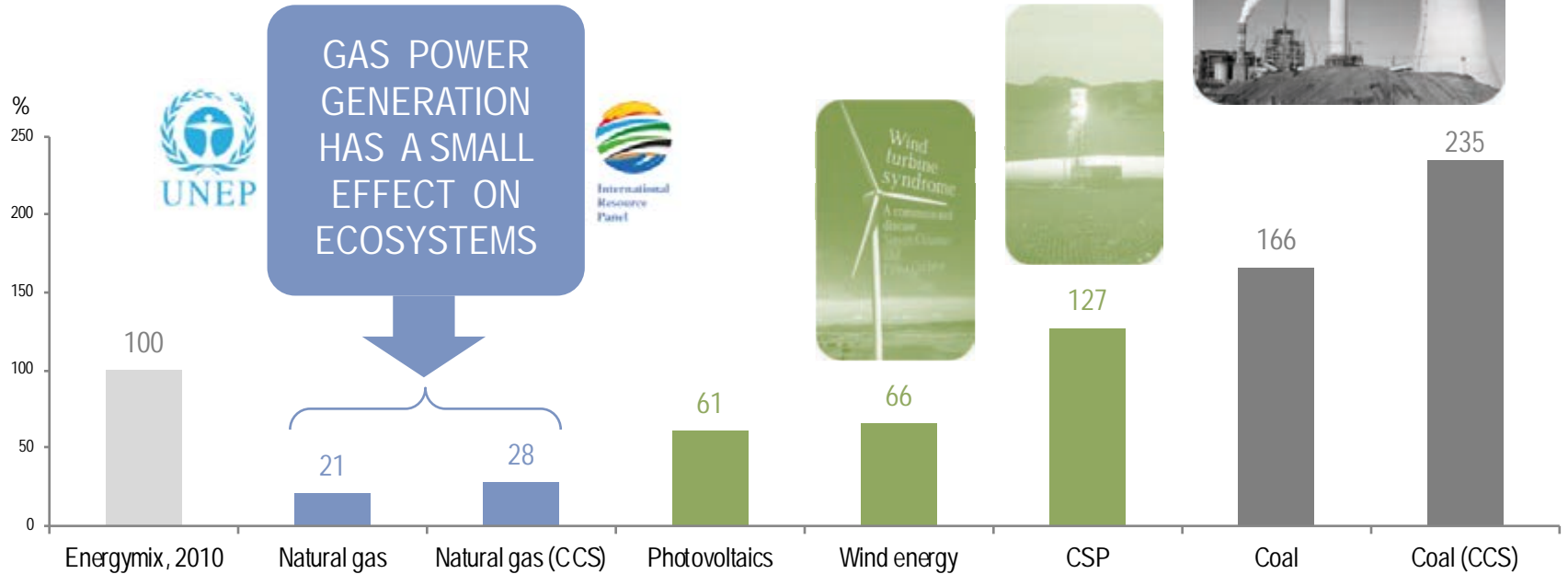
Power generation and consumption in Germany from 6th to 17th February 2021



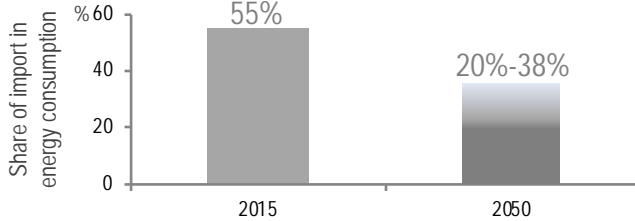


Impact of various energy sources on ecosystems

(with respect to the Global Energy Mix 2010)

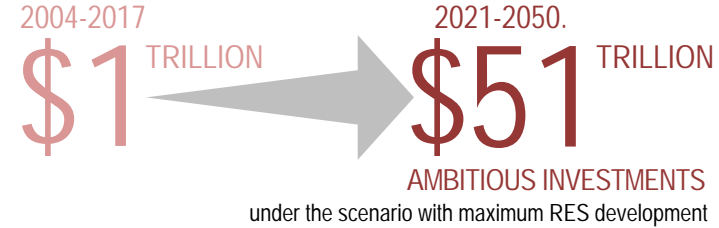


Risks of the RES



Source: European Commission, 2018

Source: Frankfurt School-UNEP Centre/BNEF, 2018



REDUCING DEPENDENCE ON FOSSIL FUELS IMPORT

under GHG emissions reduction scenarios

GOAL

RISK

LOSS OF EUROPEAN ECONOMY'S COMPETITIVE EDGE

DIMINUTION OF ENERGY SECURITY

RISK

RISK

DEPENDENCE ON RES AND REAR-EARTH ELEMENTS PRODUCERS

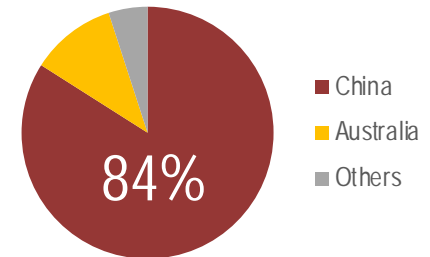


GAS-FIRED POWER GENERATION IS TO BACK-UP. YET...



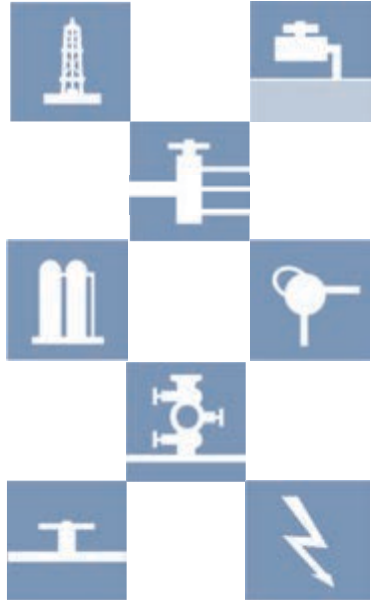
Source: School of Civil and Resources Engineering, University of Science and Technology Beijing

Rear-earth elements production in 2016





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Thank you for your attention !

19th April 2021