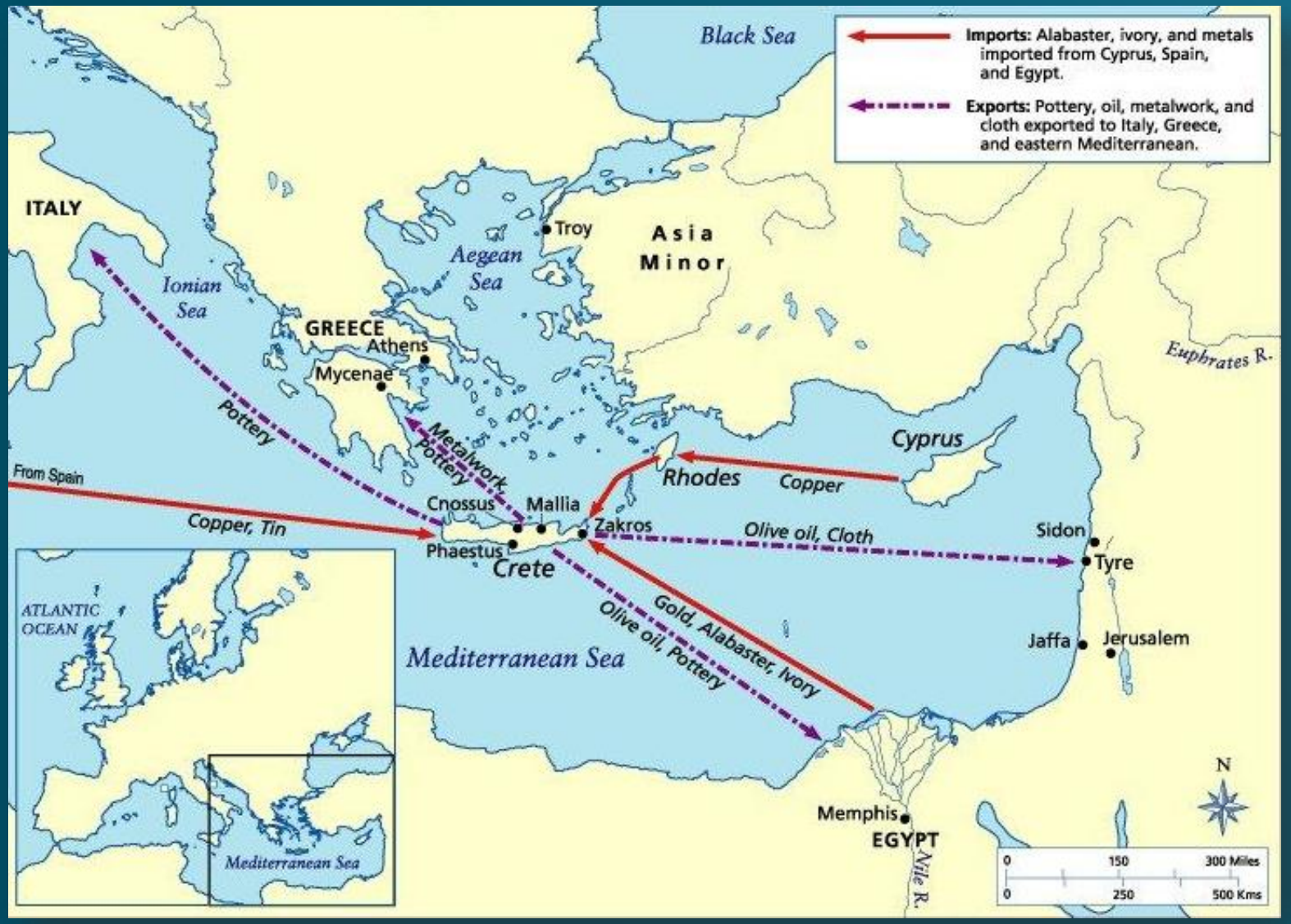
WHAT IS HAPPENING WITH GAS

The Climate of a Recent Energy Crisis

Yannis Bassias

Minoan Mediterranean Trade, 1570 BC



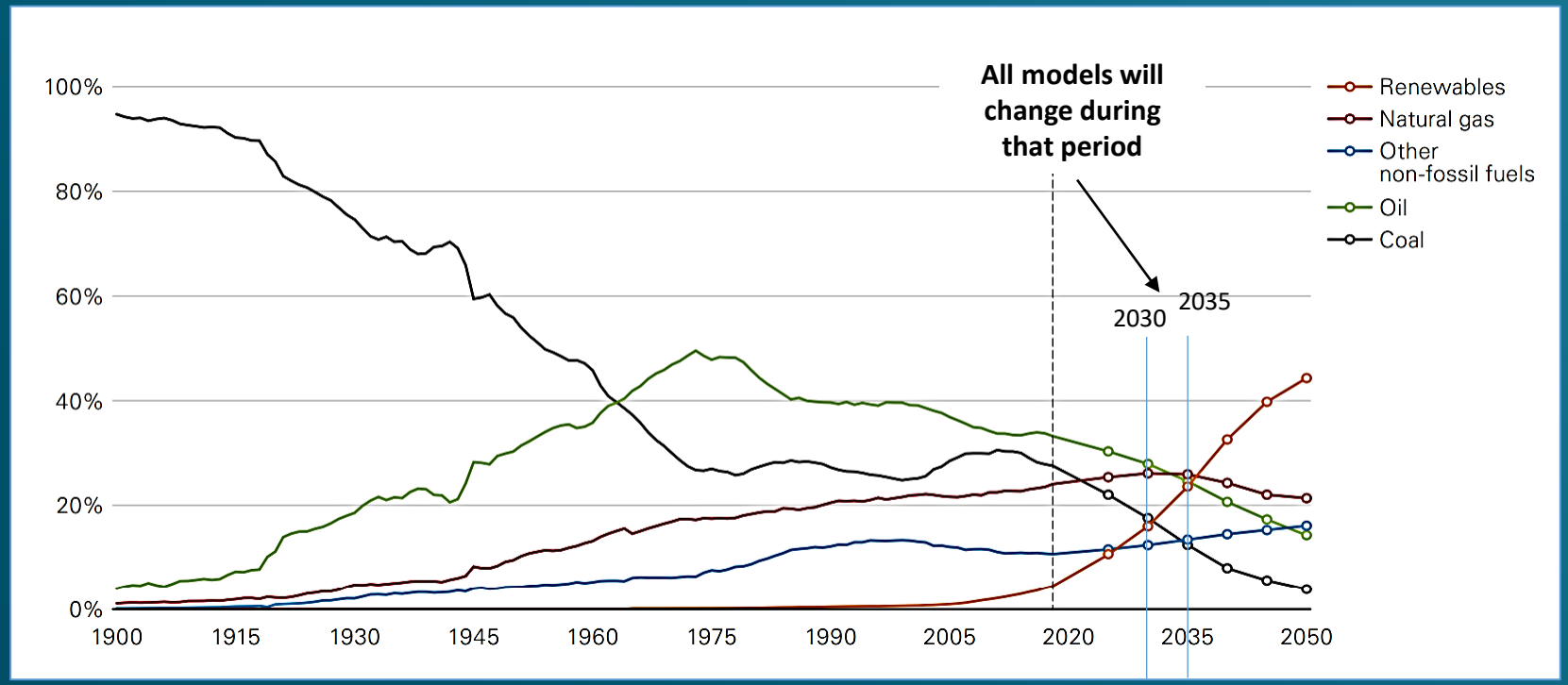
Gas Mediterranean Trade, 2021 AC

WHAT IS HAPPENING WITH GAS

The energy crisis is global and systemic
It relates to raw materials and technology and will probably stay for years

Geopolitics around the Eastern Mediterranean will determine the course of exploration, exploitation and transport of gas in the Mediterranean.

However, at a global level the market will decide. Therefore, the European Union is trying now to structure mechanisms for purchasing natural gas and increasing gas storage facilities.



It is a fact that without the **support of natural gas,** today's RES will never cover the electricity needs, whatever the model run. It is one of the **three reason**, the price of the MWh of natural gas is skyrocketing in Europe. The other two reasons are: the **absence of innovative RES** technologies and the **unregulated transition** to today's RES destabilizing the energy supply.

CONCENTRATION OF GAS INFRASTRUCTURES

The existing and under construction refineries, liquefaction plants, gas stations and pipelines in the SE Mediterranean reveal the increasing interest of the countries for infrastructures in order to satisfy the local needs and to play a role of hub focusing a European destination.

Turkish Stream with 15-19 BCM/yr, TANAP/TAP with 10-15 BCM/yr), and probably Eastmed with 10 BCM/yr, are expressions of the east to west trend during the last years. Nord Stream 1 with 110 BCM/yr and Nord Stream 2 with 55 BCM/yr are the expressions of the north to south trend.

Both trends provide 185 BCM/yr while the needs of Europe are 550 BCM/yr.

Here comes the domination of LNG

A FEW TRUTHS

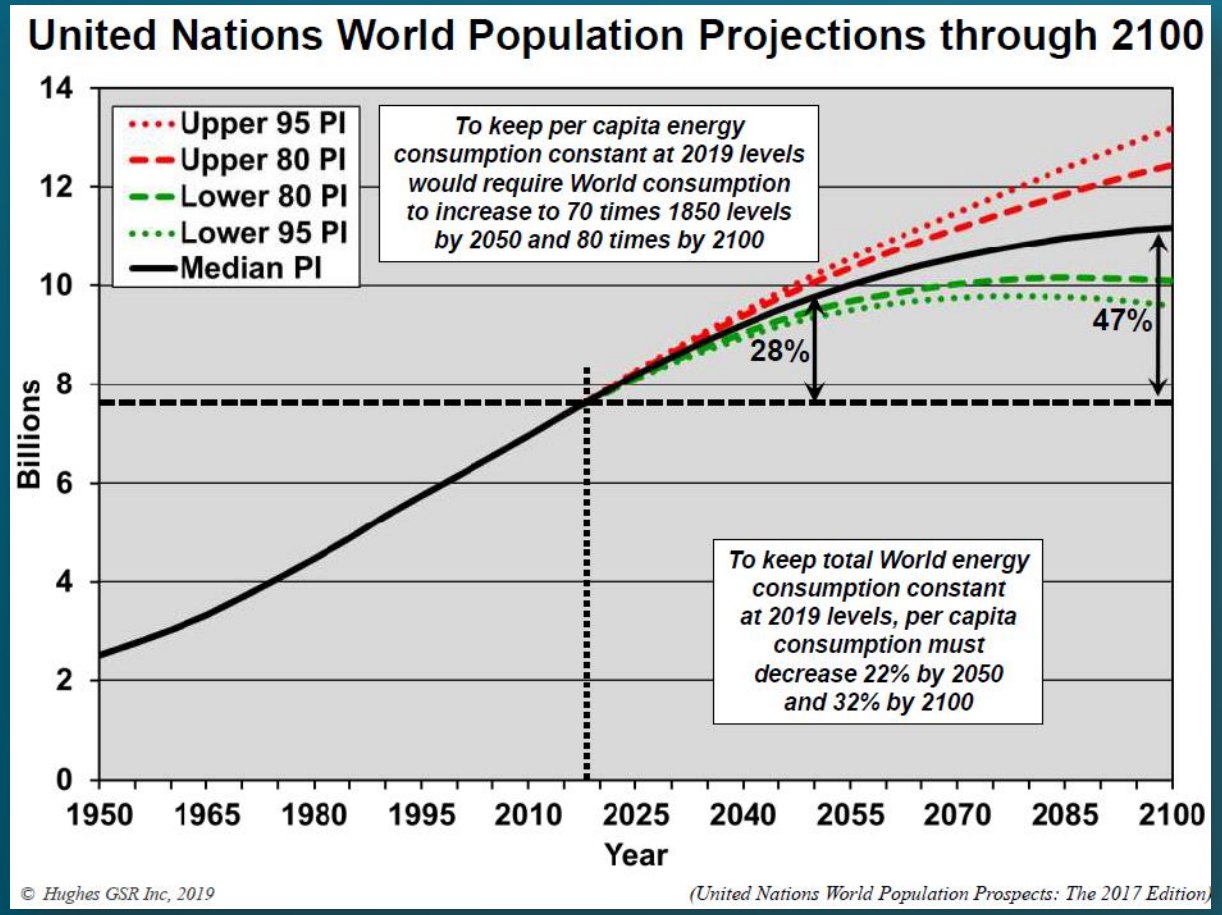
Need for energy - means - demand for energy

Renewables are not the next step because we have been using renewables since the beginning of humanity while exploiting coal and hydrocarbons accounts only for the last 200 years.

Hydrocarbons allowed the use of machines. Without machines the GDP would be hundreds of times lower.

Since 1950, oil, and now natural gas, have kept pace with growth, though increasing the anthropogenic carbon dioxide

Population and standard of living are developing in the world, but the surface of the earth remains the same



Significant innovative technological steps, that the current RES do not offer, are necessary in order to avoid shrinkage and under-development

THE FACTS

A prerequisite for strengthening the European energy independence is that natural gas, the primary component of the much-mentioned "energy mix", remains accessible, because it is necessary for the uninterrupted operation of RES.

The rise in prices reflects, among other things, the need to support private investment in the transition from coal and oil to less polluting forms of energy through the growing demand for natural gas worldwide.

GAS AND HYDROGEN

Hydrogen has inherent limitations which no technology innovation can change, at least today.

When you convert renewable energy into hydrogen through electrolysis, and then convert it back to electricity by fuel cells, you lose over 70% of the energy.

In order to produce one molecule of hydrogen through water electrolysis you need seven times more energy than when using methane.

10 turbines are necessary to produce by electrolysis the result of one turbine directly from the wind flow.

This low efficiency of electrolysis may be acceptable for certain industrial applications, but not if you are going to produce it on a large scale.

GAS AND HYDROGEN (cont.)

The snake eats its tail

It is often overlooked that carbon capture and storage require a lot of energy, which can add carbon emissions if this energy comes from the production of fossil fuels.

On the other hand, there is not enough renewable energy available to produce all the clean hydrogen that Europe wants to have in the coming years and obviously, green hydrogen will need continuously subsidies, and this is not at all cost effective.

Natural gas will remain the main source of energy and together with nuclear energy will support the industrial hydrogen production.

A FEW WORDS ABOUT GREECE

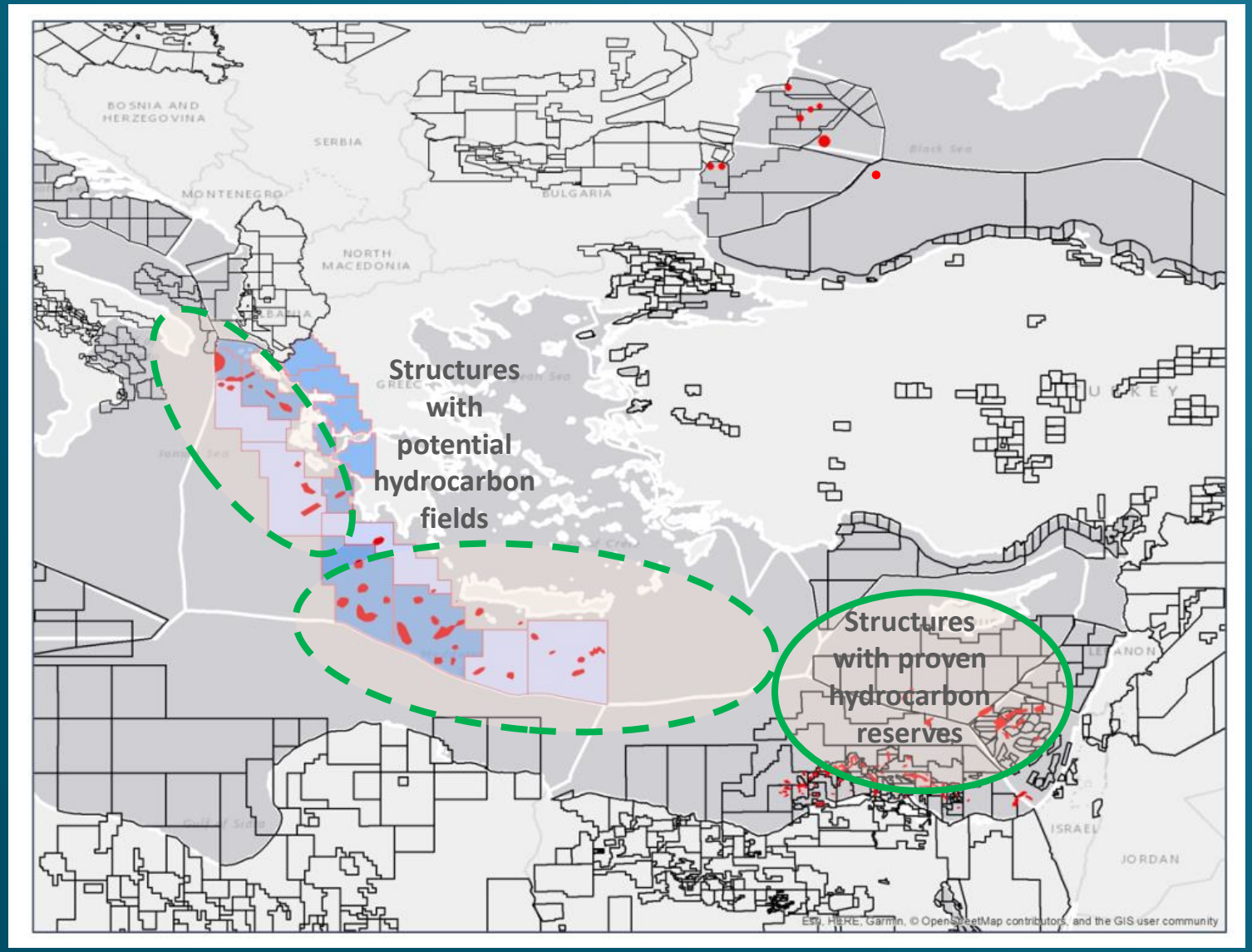
The local energy mix without gas from Russia, Algeria, Egypt, Azerbaijan and USA is not functioning.

Similarly, the electricity "flow" to Greece from Egypt is not ensured without gas.

The estimated gas resources from 30 potential leads west, southwest and south of Crete and from the Ionian Sea are between 70 and 90 TCF (12 to 15 Bboe).

This may contribute to, and even double, the potential of gas reserves in the Southeast Mediterranean pushing the edge of the gas province further west for the next 40 years.

The economic benefits of production for the Greek State, based on a period of 25 years from the start of production, can yield up to 35% net interest on sales (including income from taxation and production dividends).



Listening to the International Energy Agency, gas will continue to bridge today's alternative energy sources for decades, unless major technological advances allow for energy production through non-energy-intensive processes unrelated to today's alternative sources.

But this is another story…..

… and by the way, if you own gas, produce hydrogen,
but never buy gas to produce hydrogen