

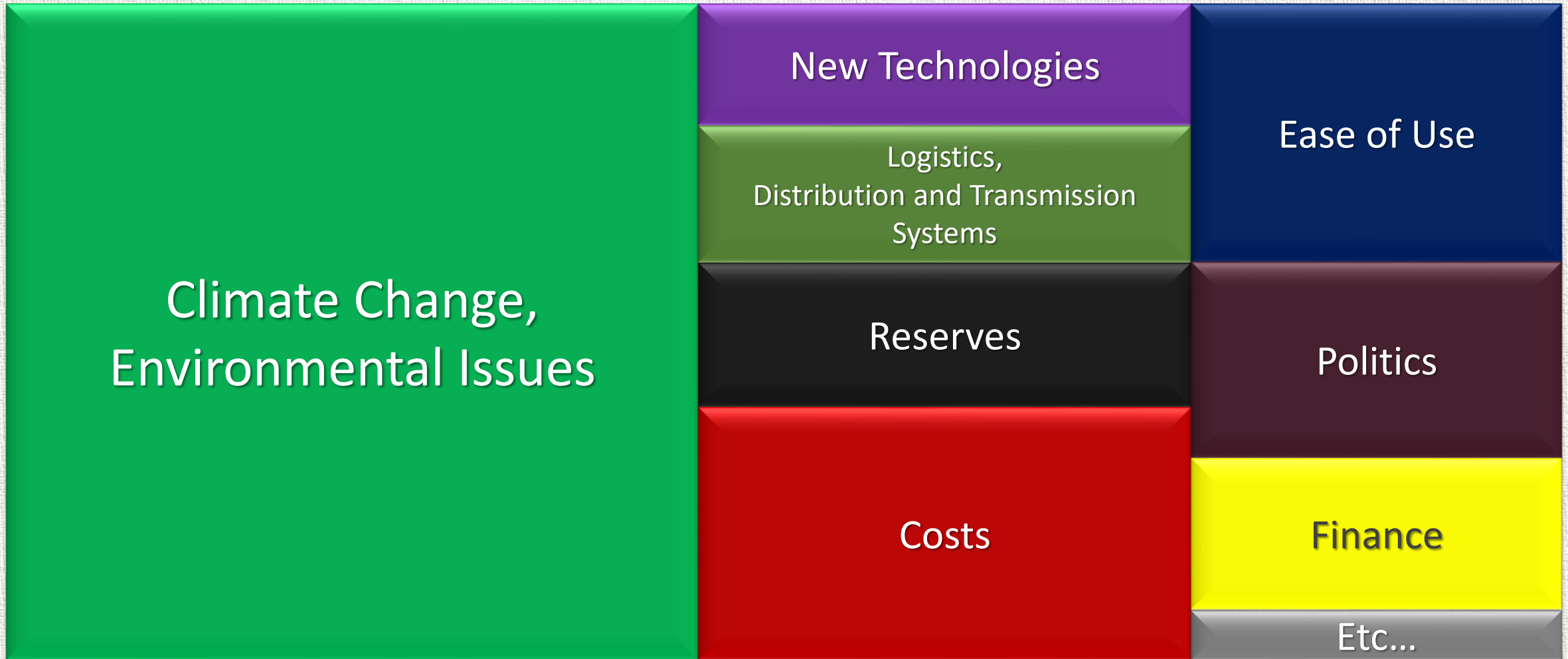


ENERGY TRANSITION

(a realistic approach)

Oğuzhan AKYENER
TESPAM President

WHY do we need ENERGY TRANSITION?



Transition: A very complicated issue!

Gt CO2

IPCC Main Mitigation Steps

Fossil Fuels ↓

Fuel Switch ↑

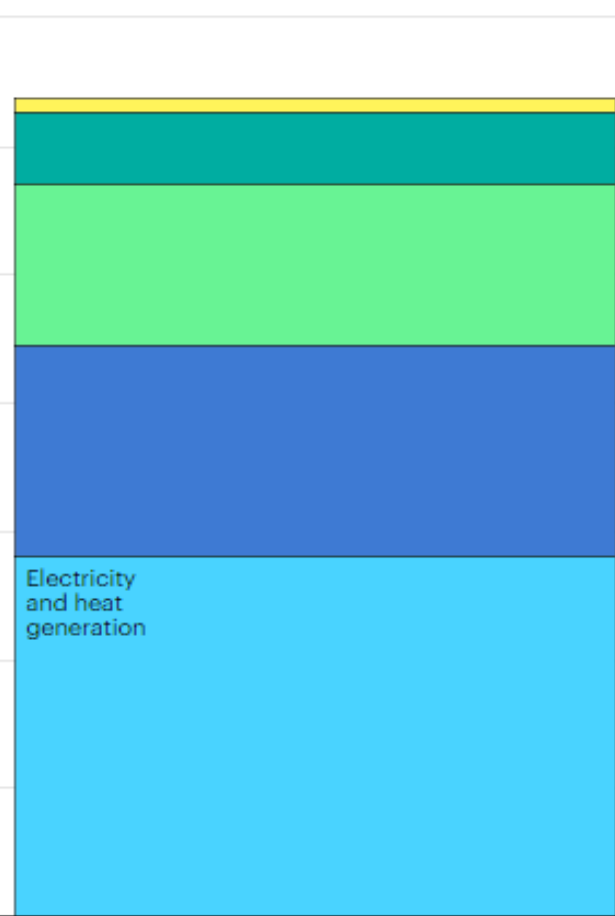
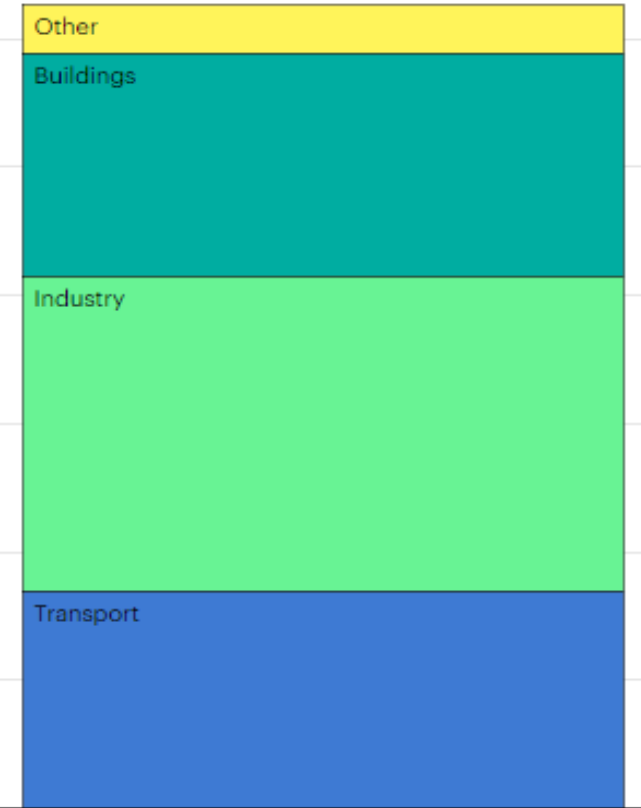
Cheap! Efficiency ↑

Cheap! Clean Technologies ↑

Nuclear Feed ↑

Carbon Capture & Storage ↑

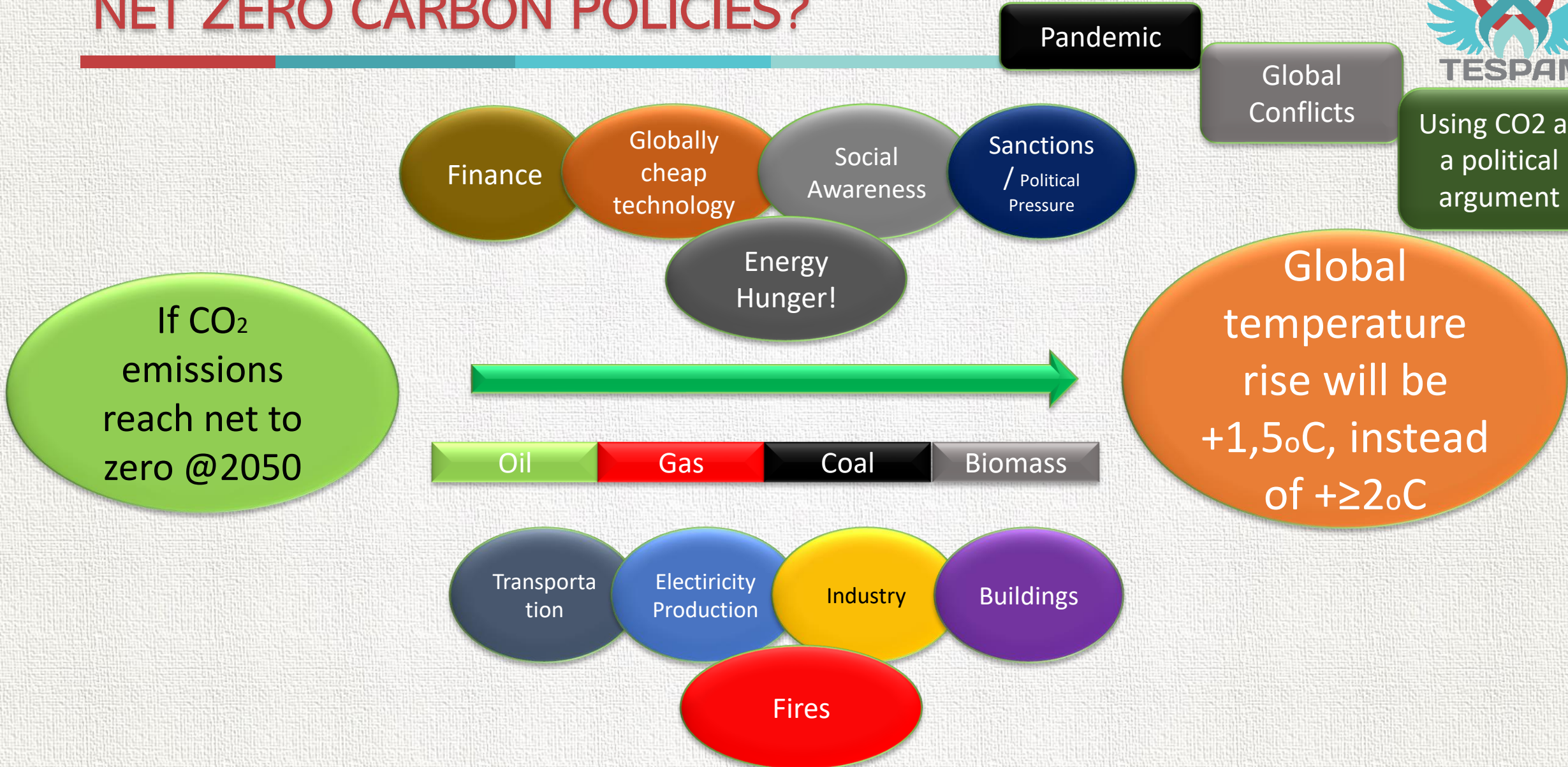
But?



With electricity and heat seperated

With electricity and heat reallocated

NET ZERO CARBON POLICIES?

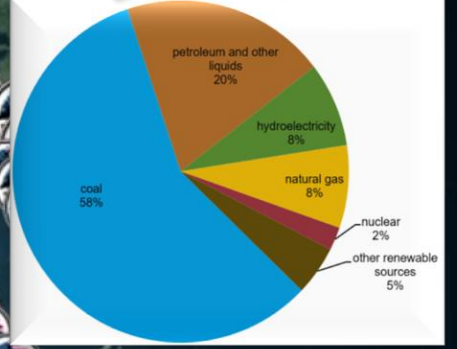


THE VISION OF A FAIR, APPLICABLE AND COMPATIBLE CLIMATE MODEL

Yeni **SOĞUK SAVAŞ** başladı!
Enerji Dönüşümü bir Politik Argüman Olarak Kullanılıyor.

Her türlü siyasi hedefe biraz iklim biberi serpin!

CBAM?



Energy Krizi

NATO

G7

AFG

AUKUS

QUAD

G20

COP26

Kazakistan
Protestoları

Myanmar
Katliamları

RUSxUKR

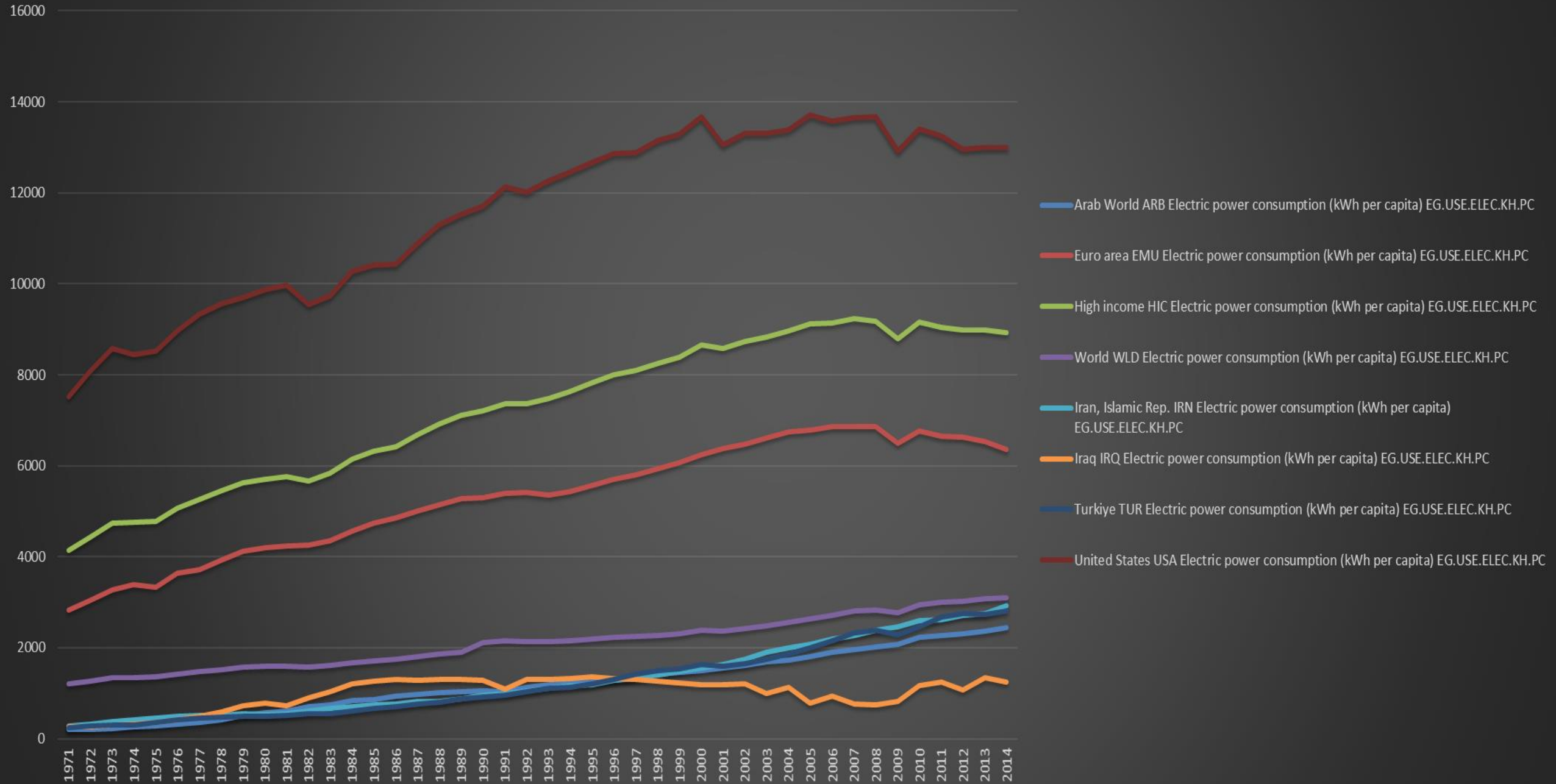
Resesyon

G7 & NATO
Zirveleri

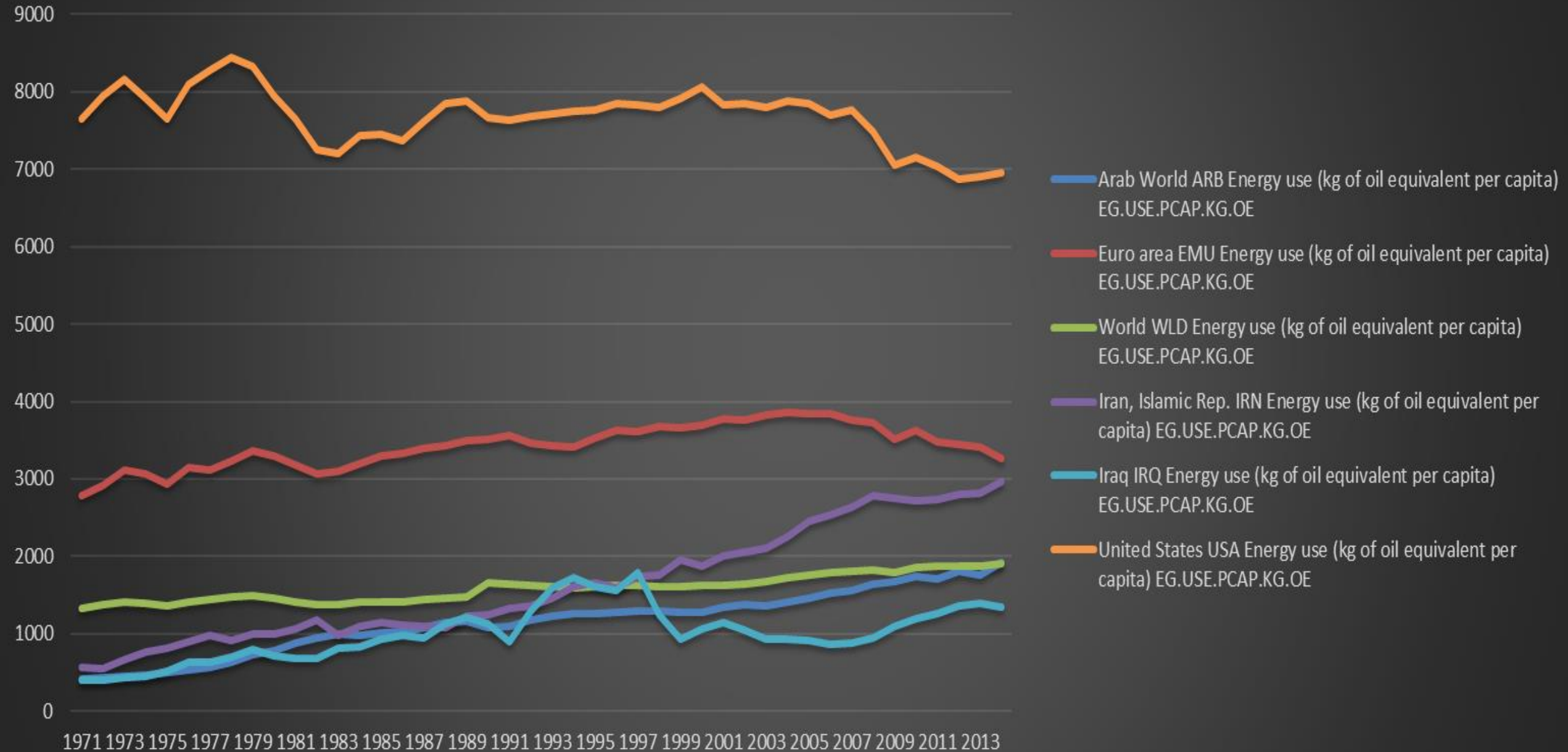
COP27
COP28

İsrail X Hamas

Kişi Başı Elektrik Tüketimi (kwh)



Kişi Başı Enerji Tüketimi (kg petrol)



COP28 Dubai – COP 29 Bakü

“Beginning of the End!”

Karbon emisyonlarını (@2030) %43 ↓

Yenilenebilir Kurulu Güç x 3

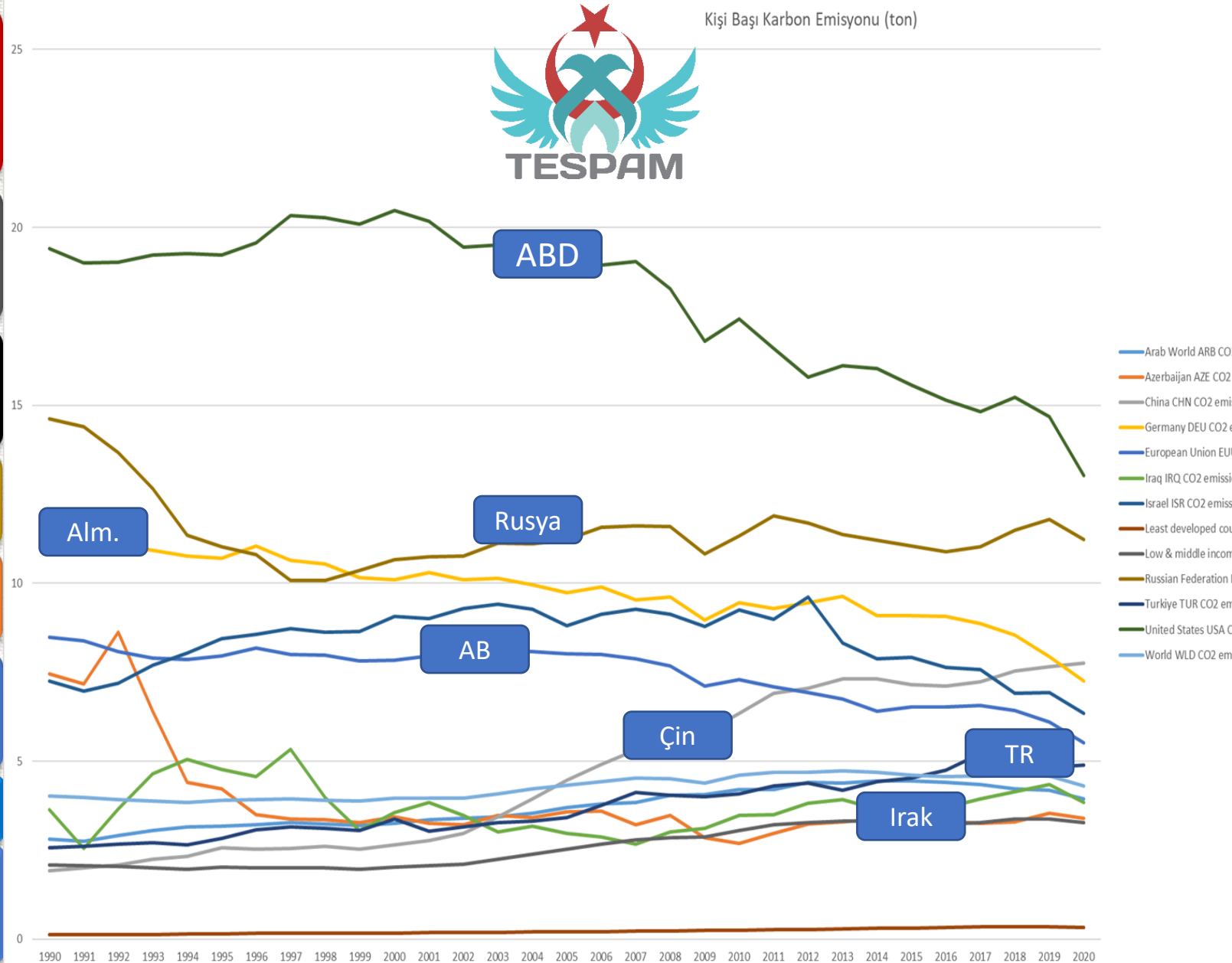
Enerji Verimliliği x 2

Verimsiz Fosil Yakıtlar X

CCS’siz Kömür Santralleri X

Metan Emisyonları ↓

Ulaşım Emisyonları ↓



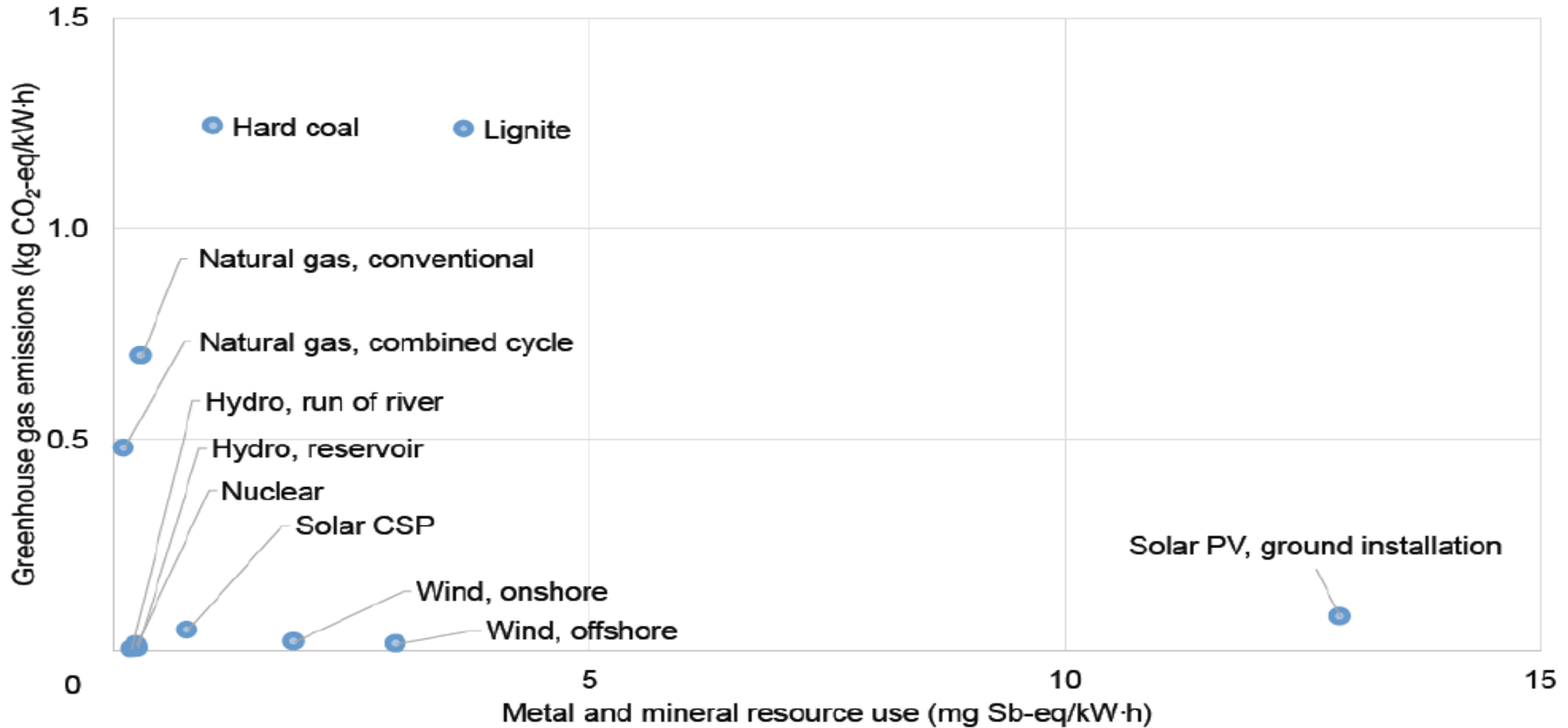
Gazze’ye Barış Toplantısında BM Genel Sekreterinin Konuşması

TR

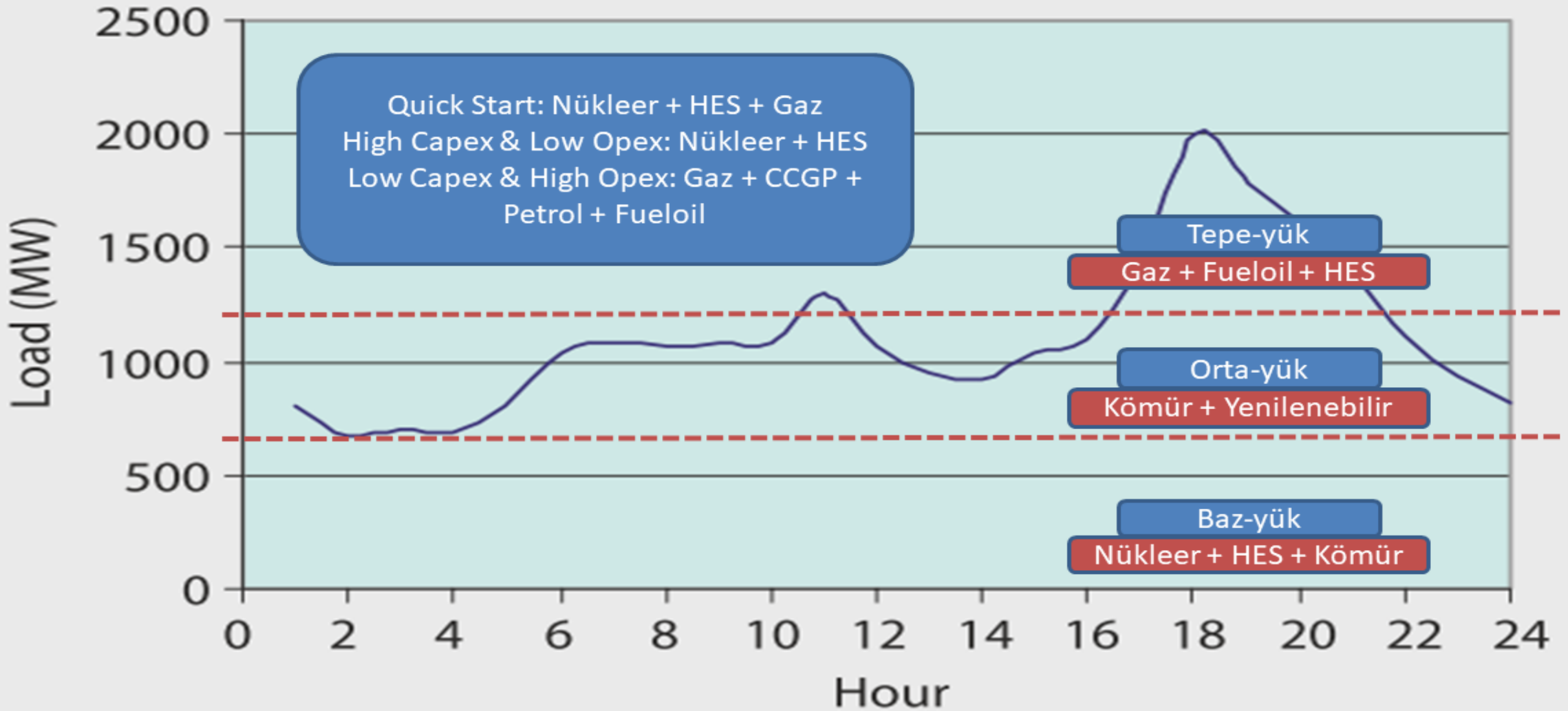
- ✓ İklim Kulübü
- ✓ Kritik Hammaddeler Kulübü
- ✓ Dayanıklı Gıda Sistemleri, Sürdürülebilir Tarım Emirlik Deklarasyonu
- ✓ Buzul Dostları
- ✓ Beton ve Çimentoda Atılım
- ✓ İklim İçin Mangrov
- ✓ Eğitim ve İklim Bildirgesi
- ✓ İklim ve Sağlık Deklarasyonu

Adil, Düzenli Ve Hakkaniyetli Bir Şekilde Fosil Yakıtlardan Uzaklaşmak

Unit Metal and Mineral Resource Use for Unit Electricity Production

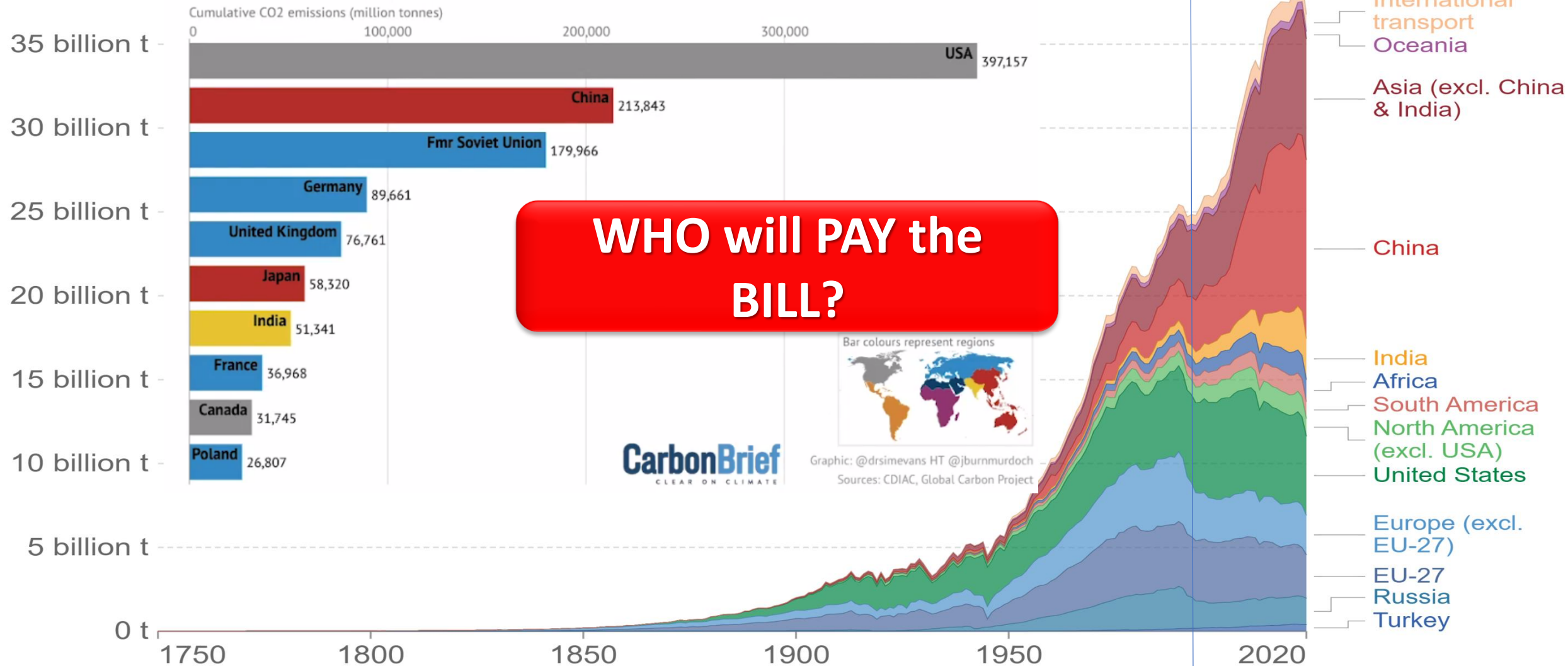


Base Load Demand!



Annual CO₂ emissions from fossil fuels, by world region

The countries with the largest cumulative CO₂ emissions since 1750



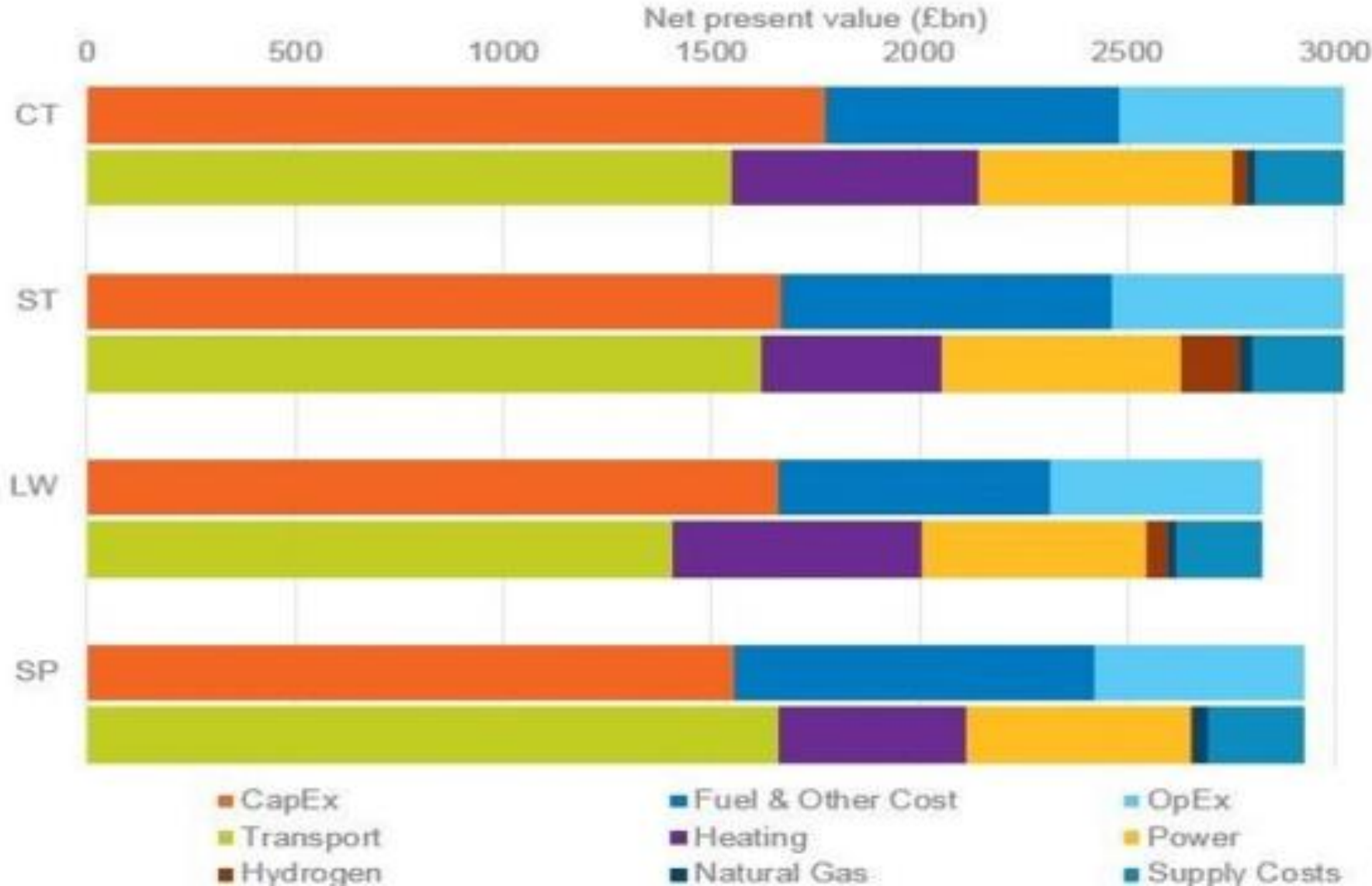
WHO will PAY the BILL?

1990 ?

Source: Global Carbon Project
 Note: This measures CO₂ emissions from fossil fuels and cement production only – land use change is not included here.
 OurWorldInData.org/co2-and-gas-emissions • CC BY

FOR NET ZERO @2050

We need > 300 trillion \$
for a safe, acceptable and
pleasant transition period!



Pamuk eller
cebe?



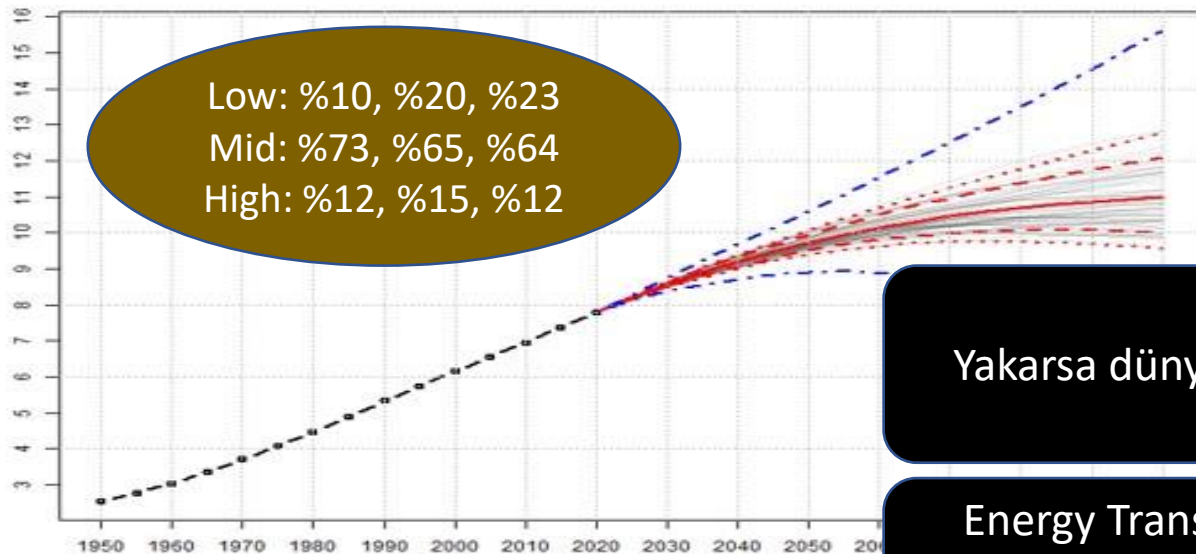
national-grid-eso

DEMOGRAPHICS

Force majeure?
CBRN & Pandemic?



World: Total Population

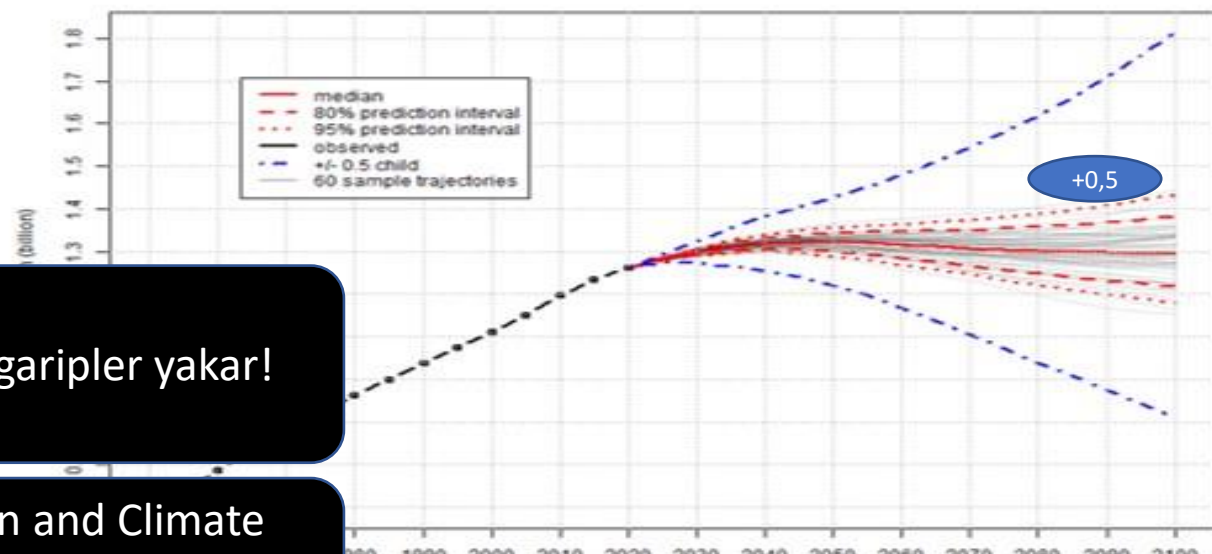


Low: %10, %20, %23
Mid: %73, %65, %64
High: %12, %15, %12

Yakarsa dünyayı garipler yakar!

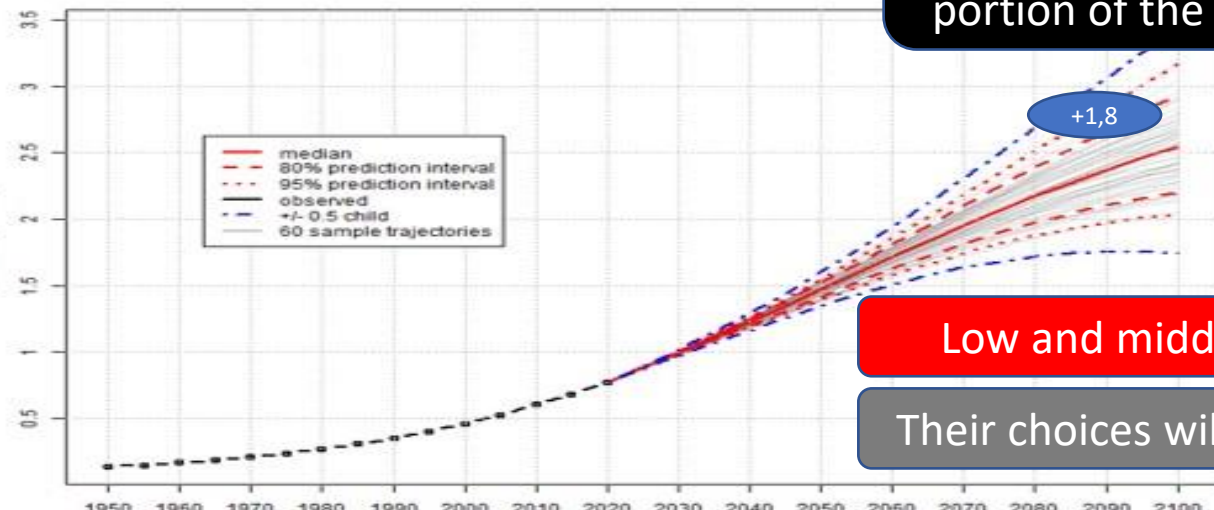
Energy Transition and Climate issues are luxury for the biggest portion of the global population!

High-income countries: Total Population



+0,5

Low-income countries: Total Population

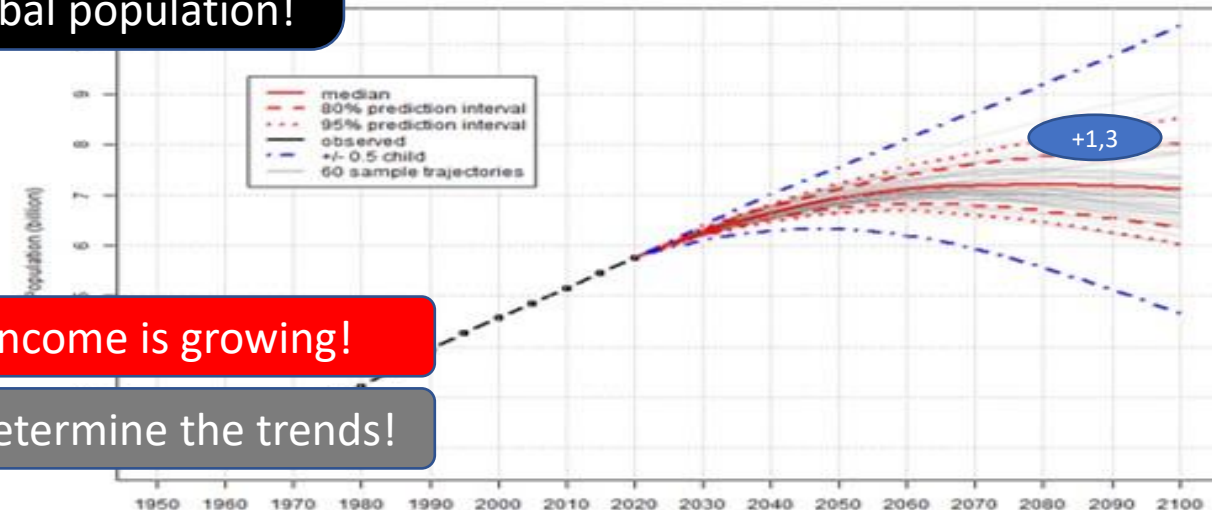


+1,8

Low and middle income is growing!

Their choices will determine the trends!

Middle-income countries: Total Population



+1,3

WHAT's the PROBLEM with OIL, GAS and COAL?

Abundant and widely available

China became the leader in coal industry

Is a good option for energy starving countries

Prices are low and will strike the bottoms after 2050's

Coal currently is China's achilles' heel

IOC's lost the dominance in reserves

OPEC+ re-gained the control on the prices

China is becoming the biggest consumer!

Chinese companies got a big share in E&P and service works!

IOC's gained the capability to singly manage their resources!

Oil card is slipping down from Western Countries' hands!

IOC's lost the dominance in reserves

China is becoming the biggest consumer!

Chinese companies got a big share in E&P and service works!

IOC's gained the capability to singly manage their resources!

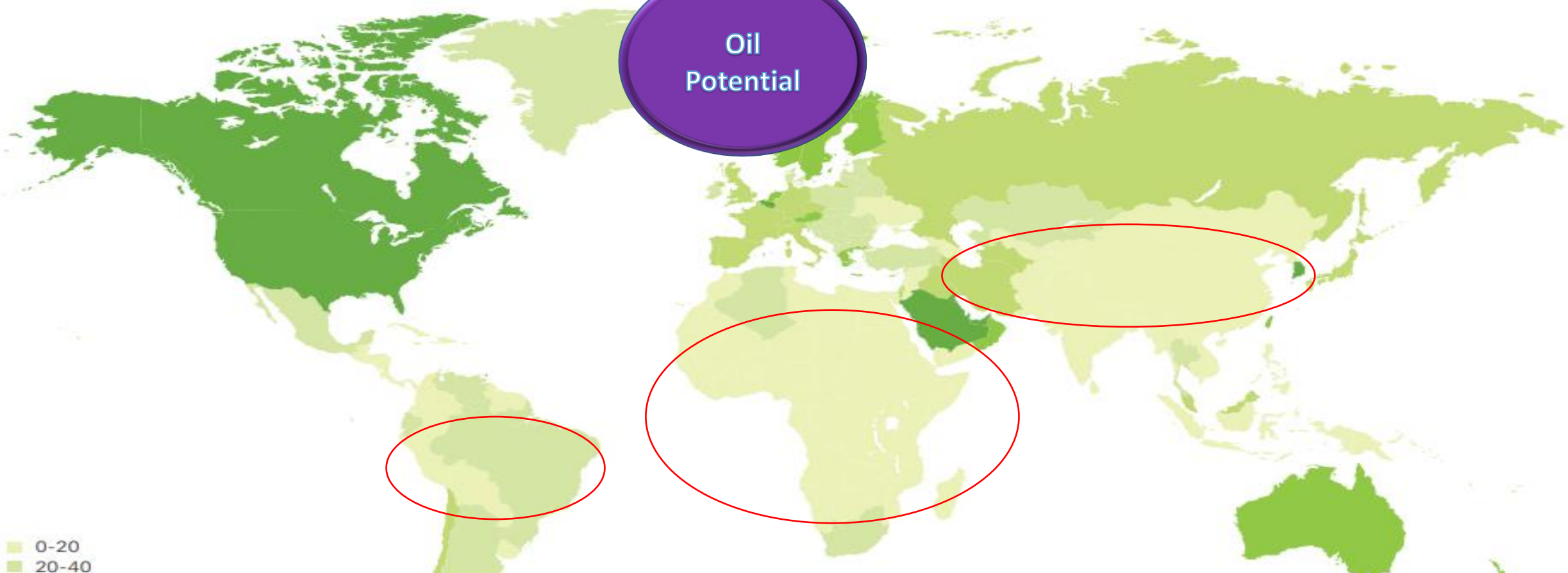
Gas card will not be hold / left in the hands of Western Countries!

Only CO2 Emissions? If so; why today?

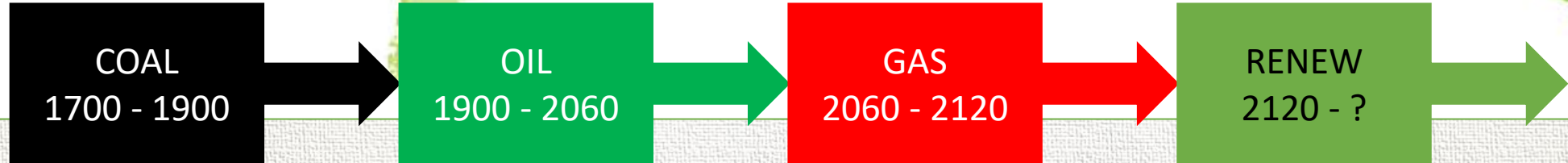
With these resources, undeveloped countries (with their growing population and economics) will get the main drive of the international system from the hands of Western Powers!

FUTURE's DEMAND ZONES!

Oil: Consumption per capita 2019
GJ per capita

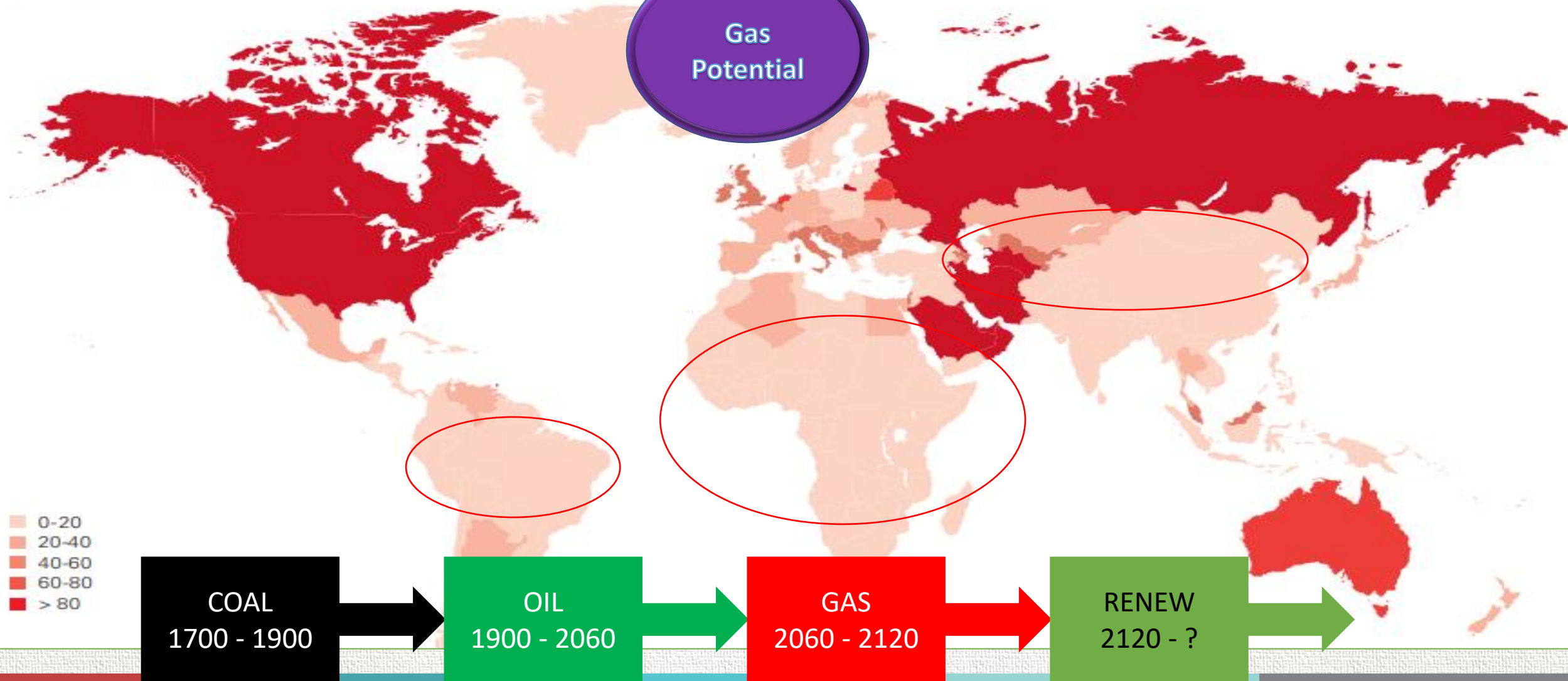


- 0-20
- 20-40
- 40-60
- 60-100
- > 100

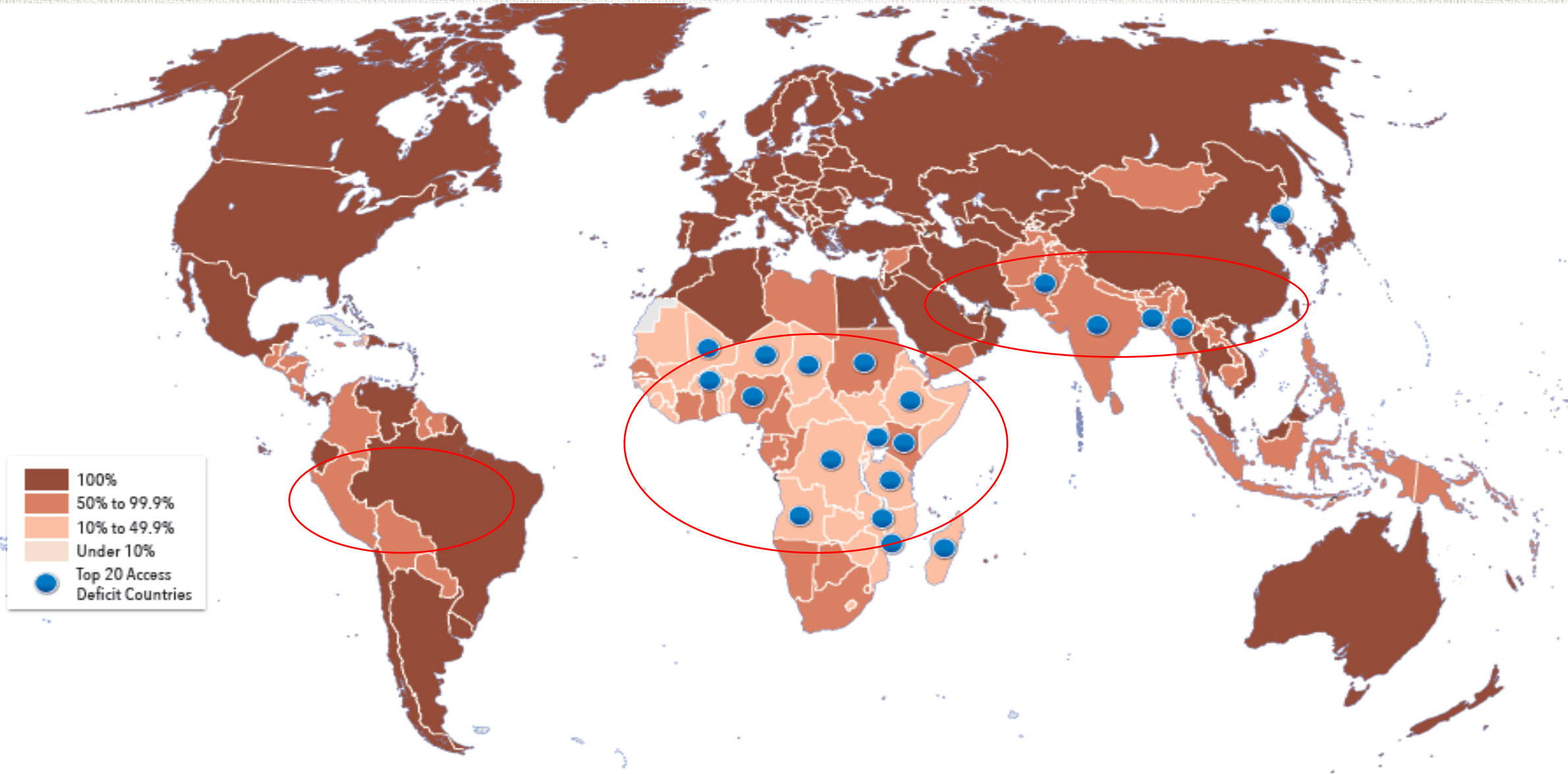


FUTURE's DEMAND ZONES!

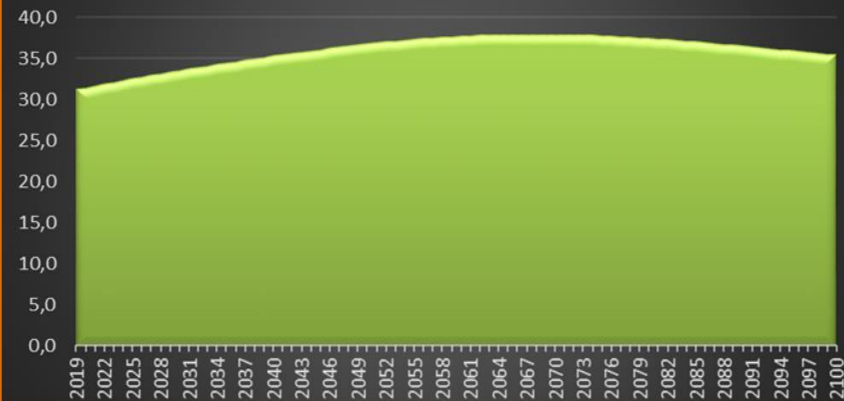
Natural gas: Consumption per capita 2019
GJ per capita



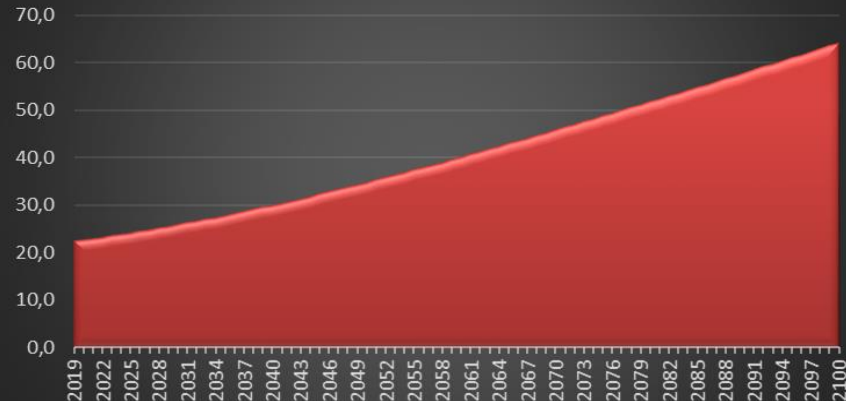
ELECTRIFICATION



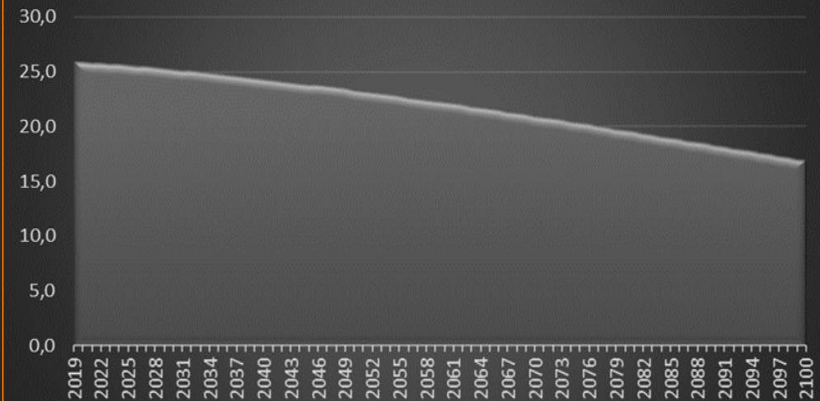
Oil Consumption (billion bbl)



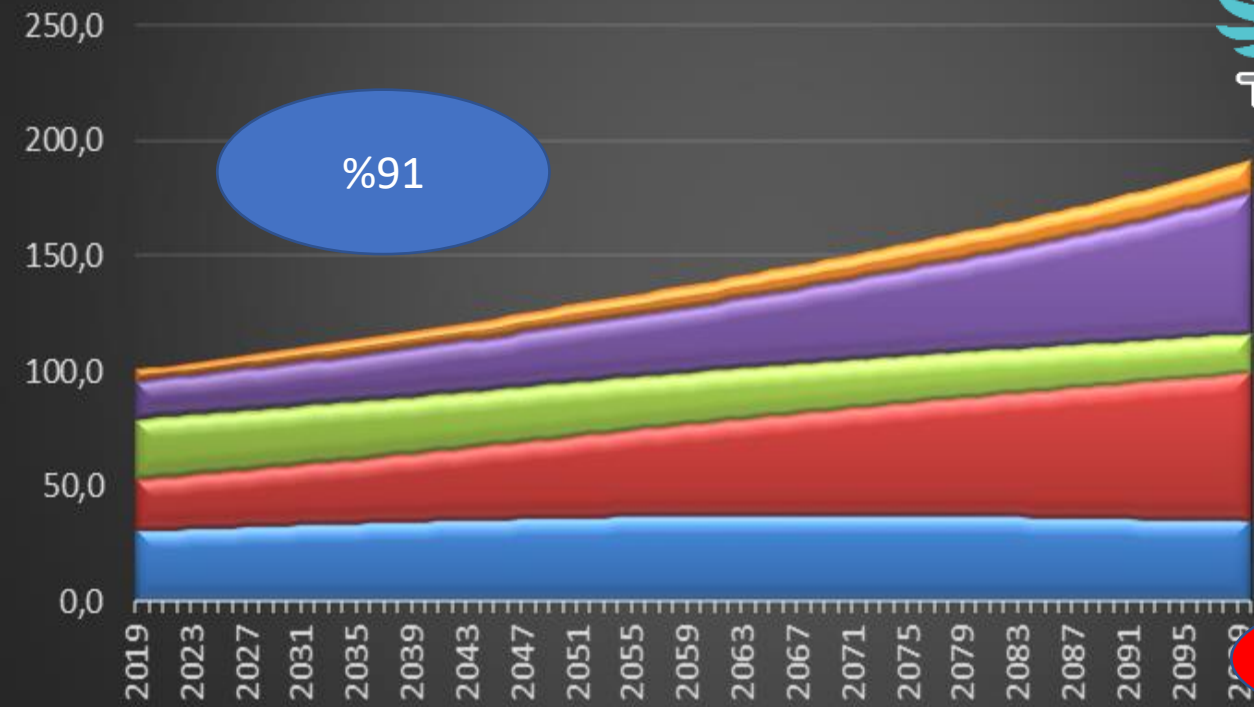
Gas Consumption (billion boe)



Coal Consumption (billion boe)



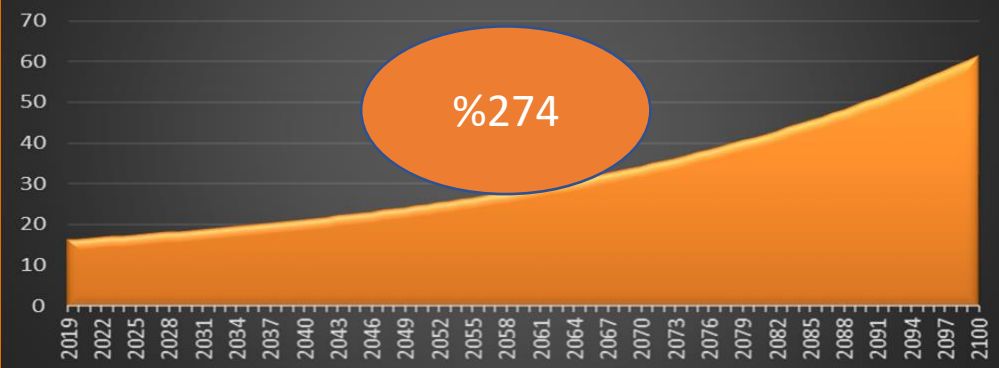
Total Primary Energy Consumption (billion boe)



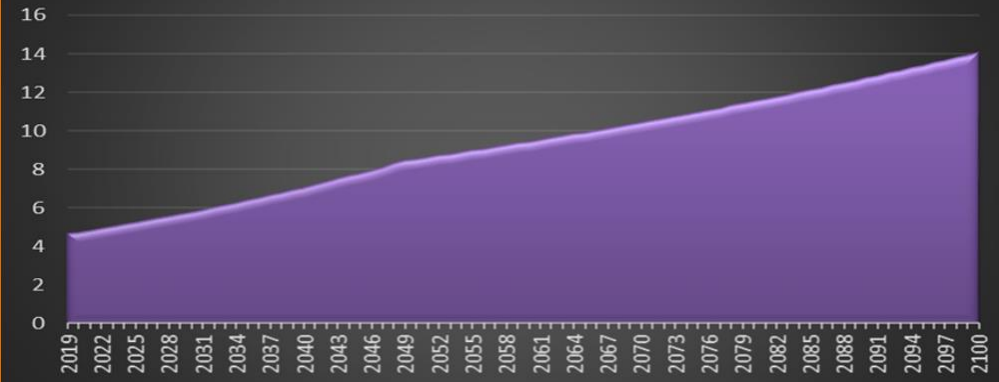
- Nuclear
- Renewables
- Coal
- Gas
- Oil

From 2019
Estimations

Renewables (wind, solar, hydro, geo, bio) Consumption (billion boe)



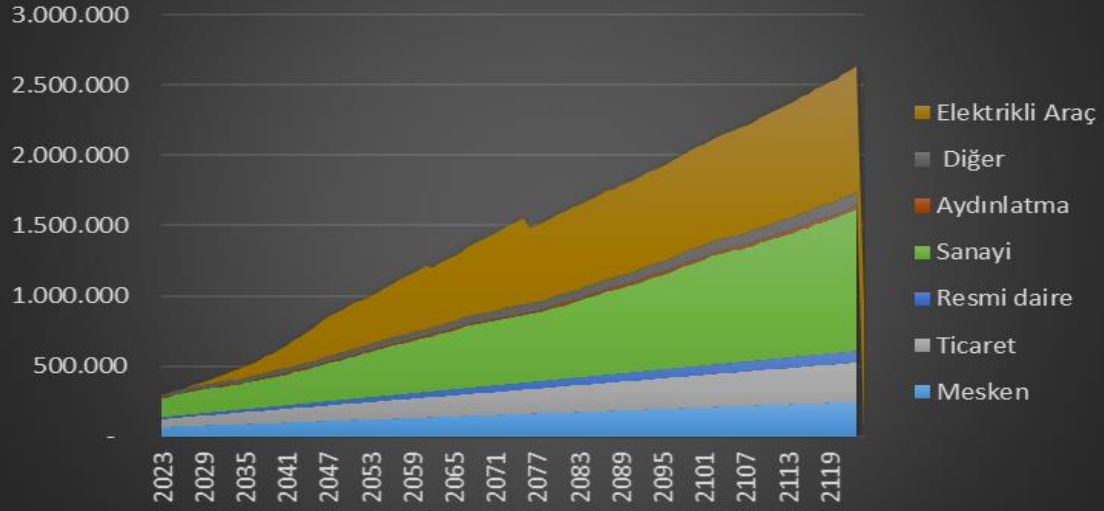
Nuclear Consumption (billion boe)



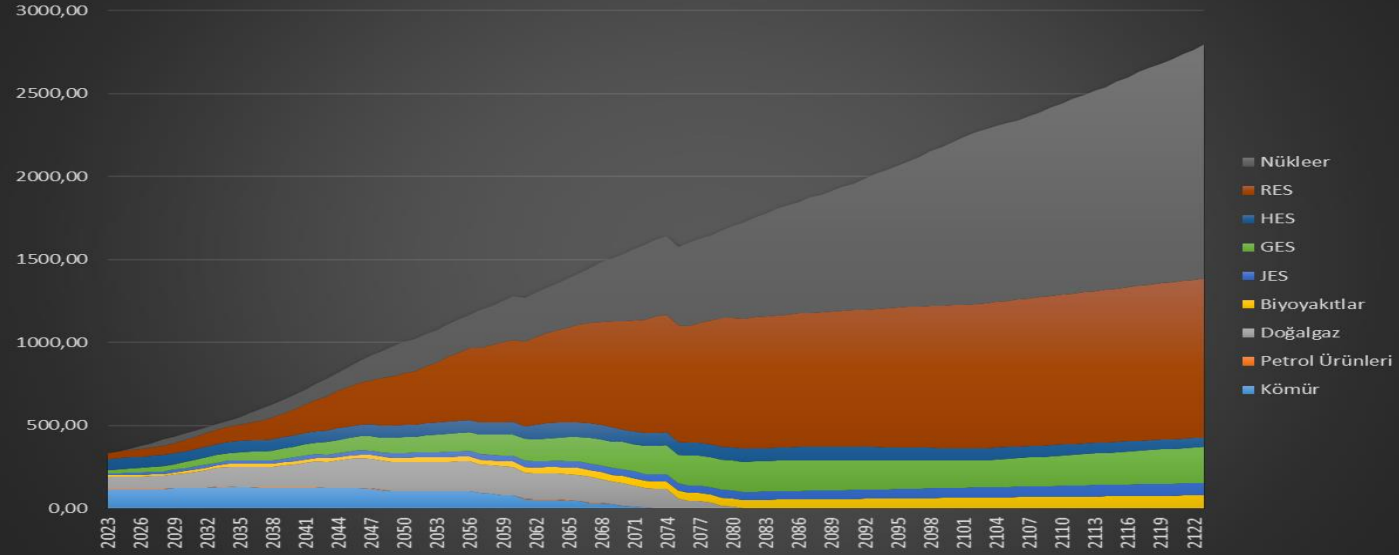
TESPAM's new Projections for Türkiye



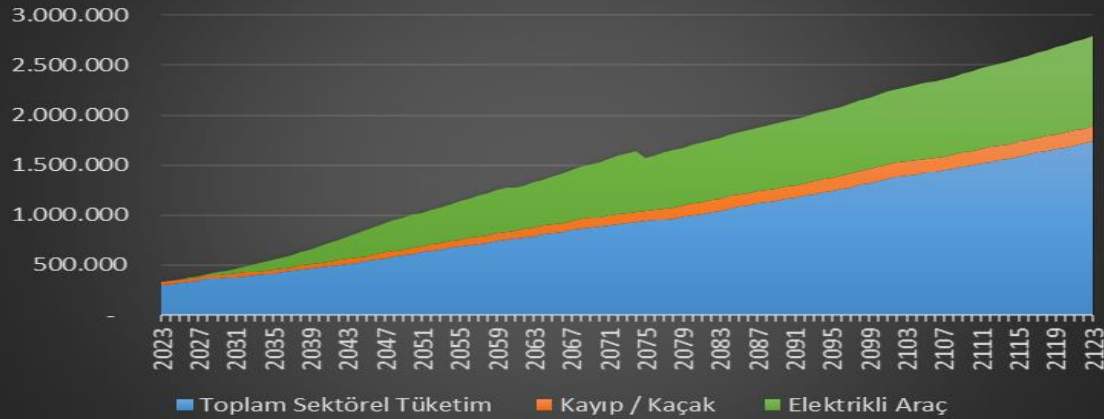
Sektörel Elektrik Tüketimi (mwh)



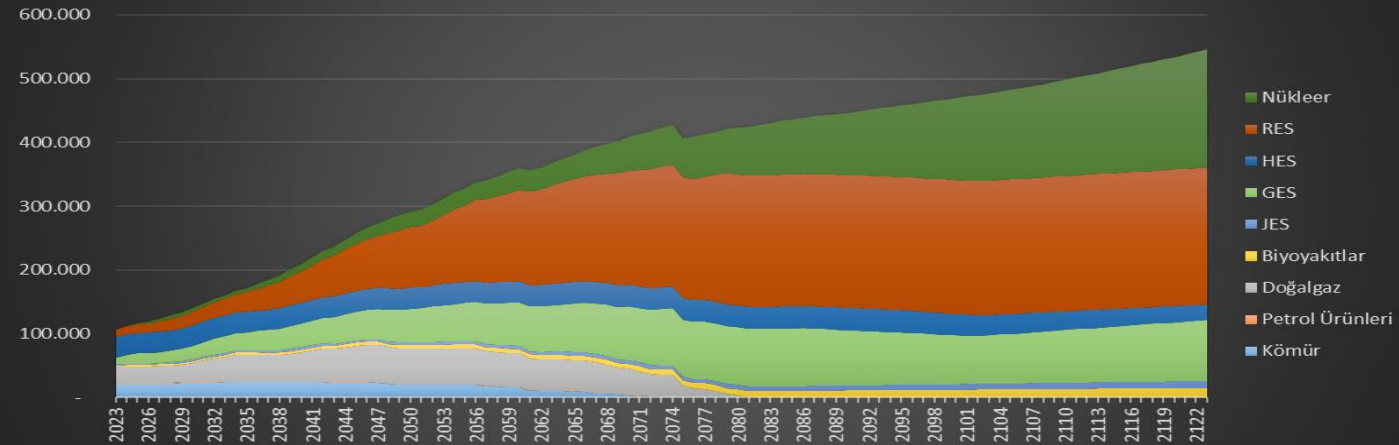
Kaynaklara G re Elektrik Arzı (gwh)



Elektrik Tüketim Trendleri (mwh)



Kurulu G ç (Mw)



RESULTS?

Do we have
Adequate – Common
finance and technology?

If the politicized
arguments are
embracing and credible?

Can development
processes be managed
without oil, gas and
coal?

If everyone switched to electric
vehicles; Are there enough
infrastructure, electricity generation
potential, critical elements?

Is nuclear-free energy
transition possible?

Can we accept nuclear
technology for
everyone?

Can we arrange full
control over
radioactively risky
materials?

Is the international
system ready for a
major nuclear
transition?

We need an
inclusive, ethical,
realistic climate
model for all!

Problem is in the
non-developed
and Non-
Annexed
countries

Conflicts, crisis,
wars and
sanctions
worsen the
pathway!

Doğru Bir Analiz İçin Multidisipliner Yaklaşım Şart

