CAETS 2021
ARGENTINA
Engineering a Better World
THE FUTURE OF ENERGY

Buenos Aires, September 17-24, 2021

ARGENTINA ENERGY PROFILE

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AN ALL-WEATHER GEOGRAPHY DEMANDS A ROBUST ENERGY SYSTEM

https://ar.pinterest.com/pin/310299179916649 73/

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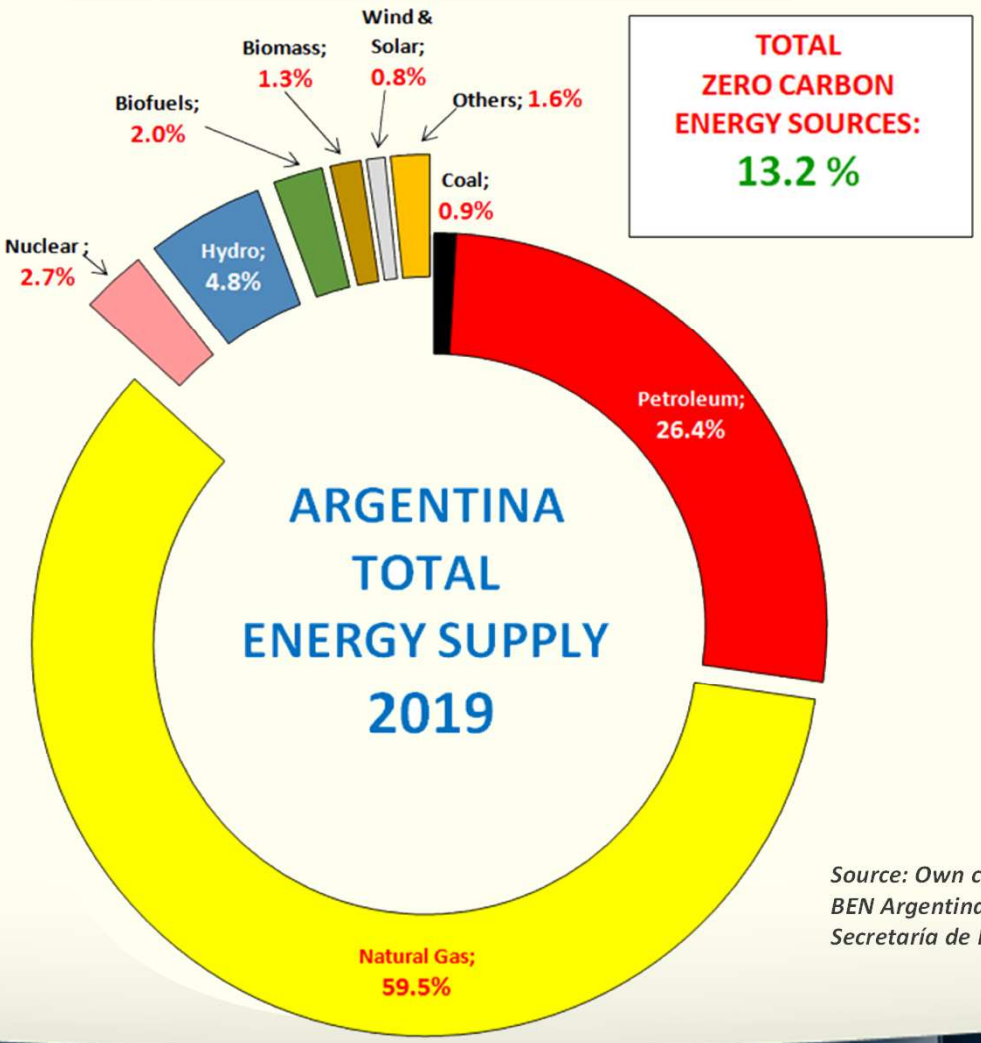
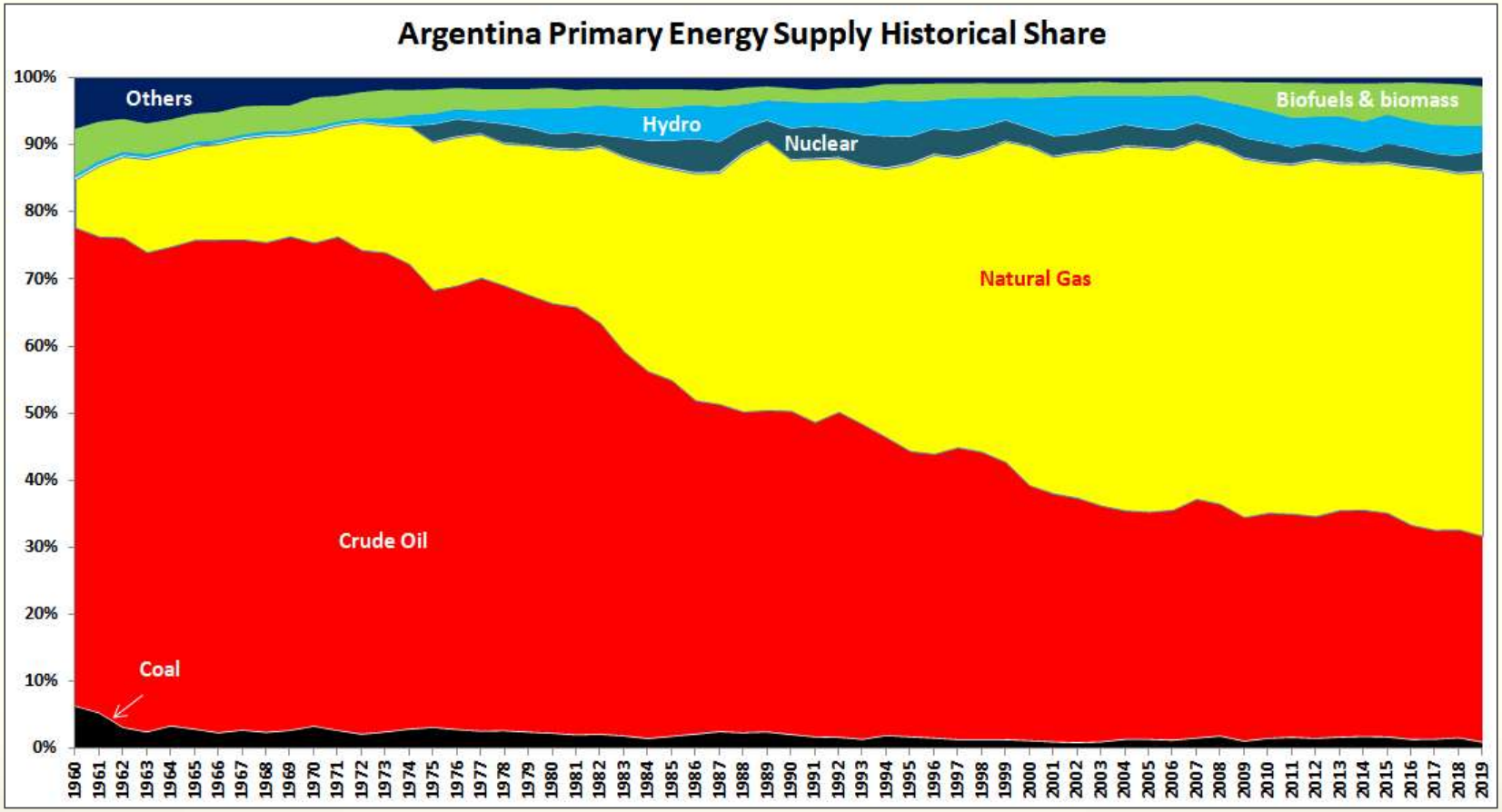
AMONG THE 10 COUNTRIES WITH 50%+ NATURAL GAS IN ITS ENERGY MIX



Source: Own calculations based on BEN Argentina 2019 Secretaría de Energía

NATURAL GAS: A LONG LASTING AND SUCCESSFUL DOMINANCE OF THE ENERGY LANDSCAPE

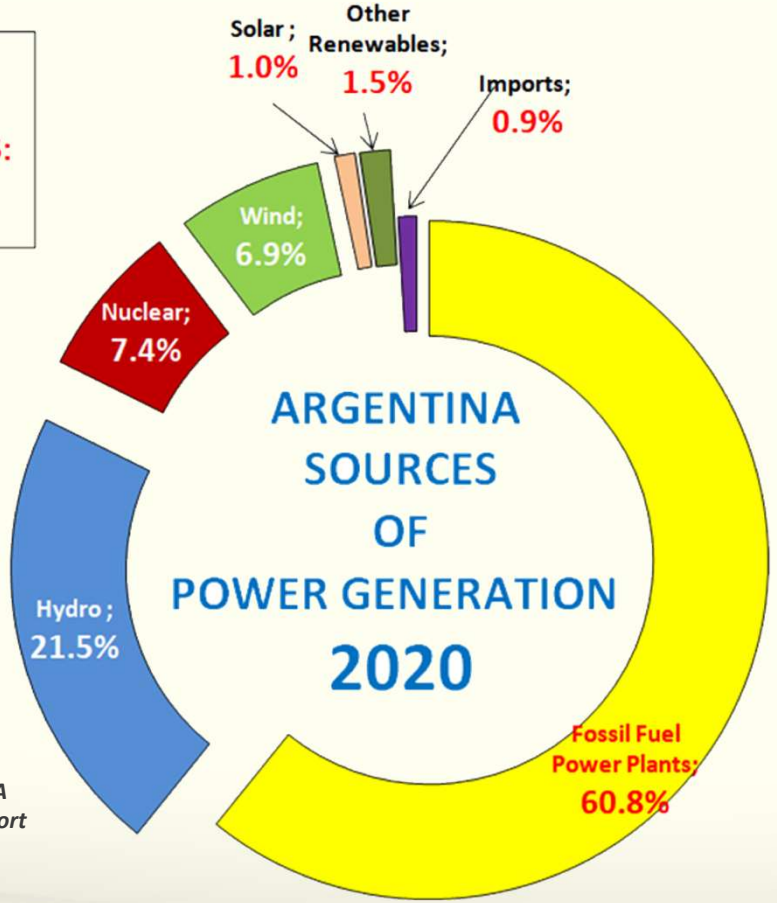


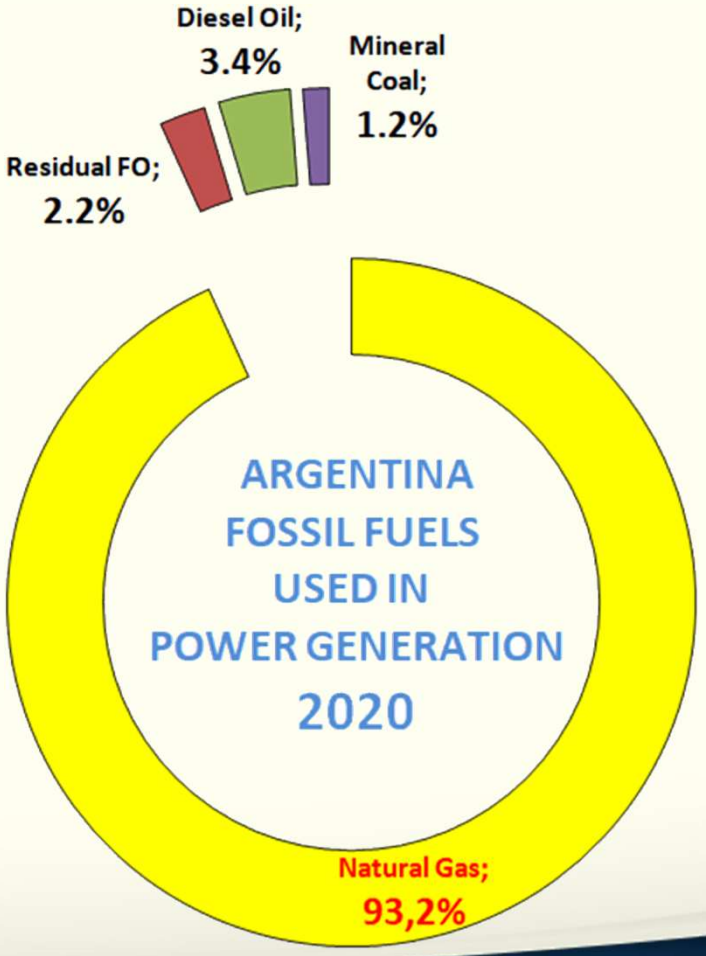
Source: BEN Argentina 1960-2019 - Secretaría de Energía

Loma La Lata natural gas megafield discovery

POWER GENERATION SHOWS A MORE DIVERSIFIED PICTURE BUT STILL NATURAL GAS HAS AN IMPORTANT SHARE

TOTAL ZERO CARBON POWER SOURCES: 38.3%

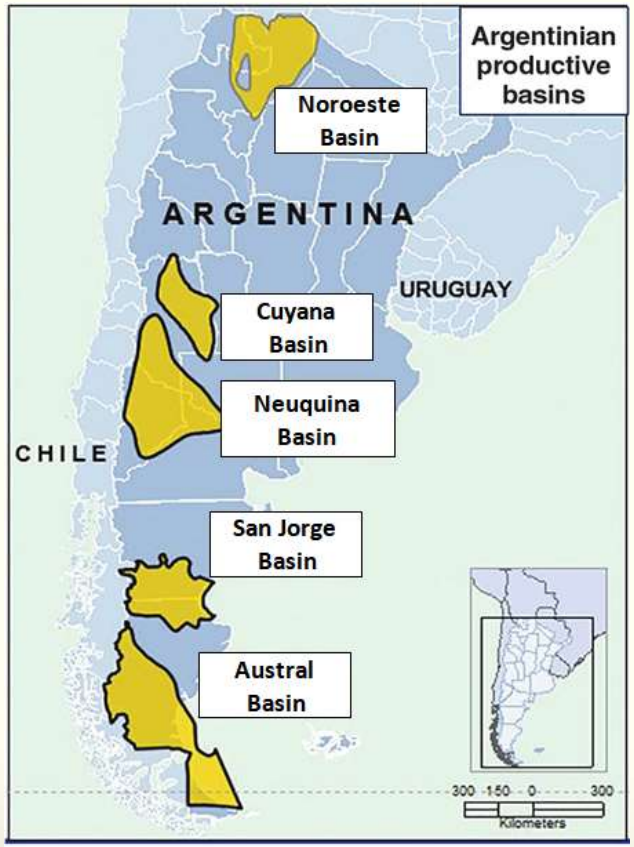




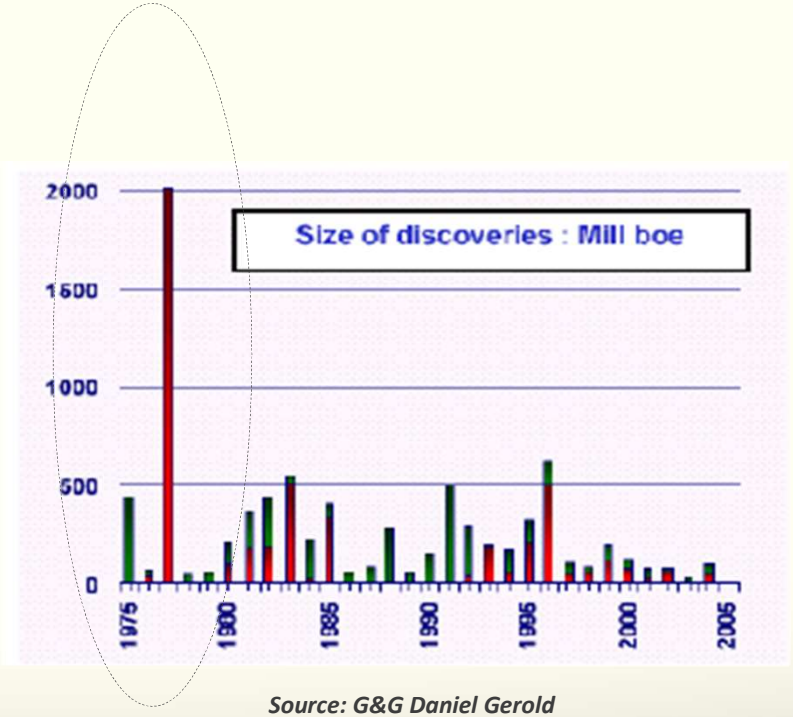
Source: CAMMESA 2020 Annual Report

CONVENTIONAL HYDROCARBONS

More than 110 years of conventional oil extraction and 70 years of natural gas exploitation activity in 5 sedimentary basins (another 18 are undeveloped)



1977: a game-changer world class natural gas finding (Loma La Lata) in Neuquen basin



Source: G&G Daniel Gerold

NOW: HUGE UNCONVENTIONAL RESOURCES

OIL

4th Unconventional Resource in the World

NATURAL GAS

2nd Unconventional Resource in the World

Argentina has world-class shale gas and shale oil potencial – possibly the most prespective outside of North America – primarily within the Neuquen Basin. Additional shale resourse potencial exists in three other untested sedimentary basins.

Source: World shale gas and shale oil assessment EIA/ARI, 2013

Source: ARI, 2013.

50 YEARS OF SMOOTH OPERATION OF NUCLEAR POWER PLANTS

Reactors operating in Argentina

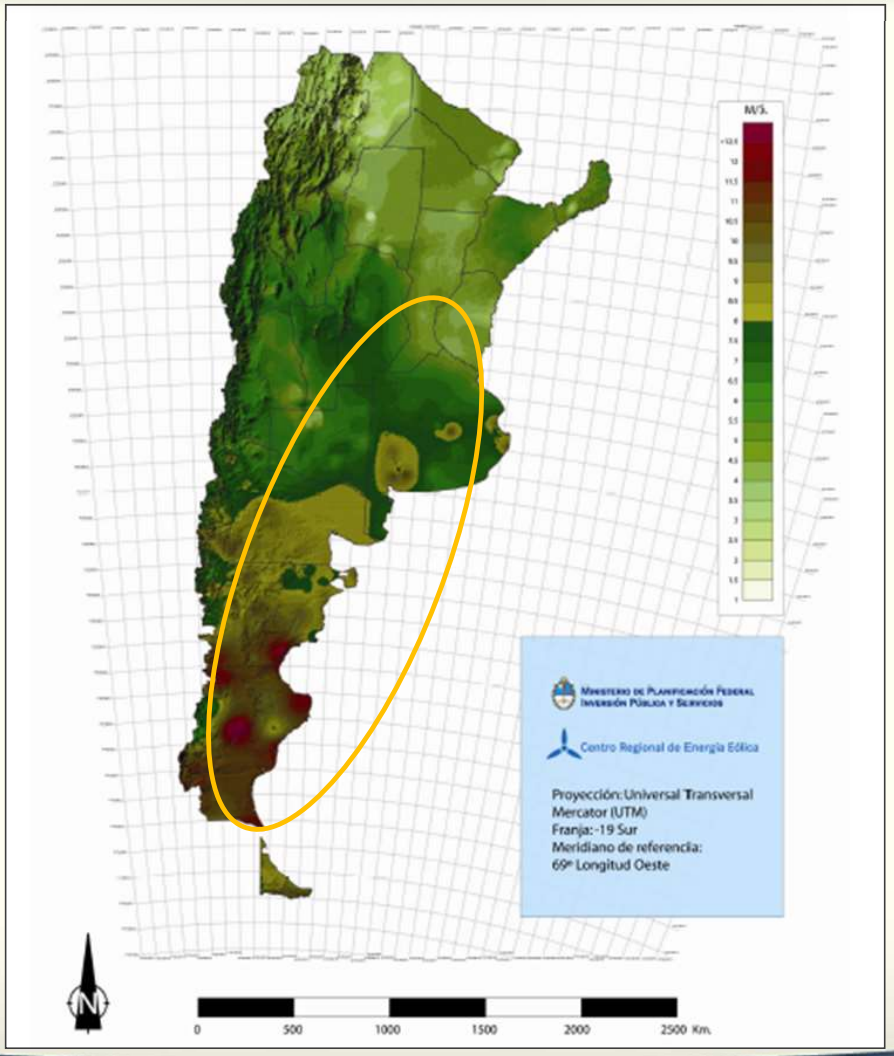
Reactor Name	Model	Reactor Type	Net Capacity (MWe)	Construction Start	First Grid Connection
Atucha 1	PHWR KWU	PHWR	340	1968-06	1974-03
Embalse	CANDU 6	PHWR	608	1974-04	1983-04
Atucha 2	PHWR KWU	PHWR	693	1981-07	2014-06

Reactor	Location	Model	Gross MWe	Construction start	First power
Under construction:					
CAREM25	Lima, Buenos Aires province	CAREM	29	Feb 2014	

https://www.world-nuclear.org/information-library/country-profiles/countries-a-f/argentina.aspx

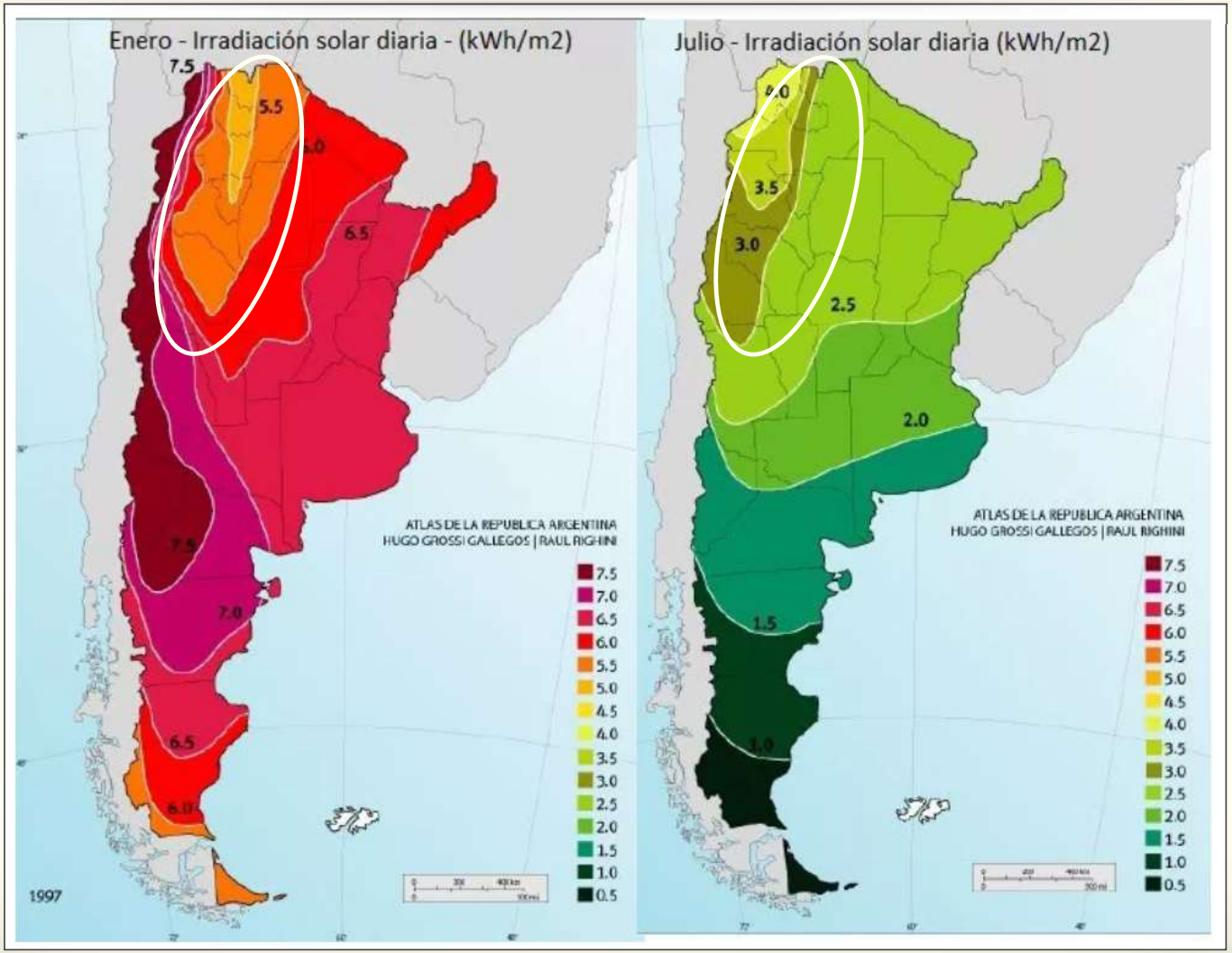
LARGE POTENTIAL IN RENEWABLE ENERGIES: WIND POWER…

Average wind speed at 50m above ground level



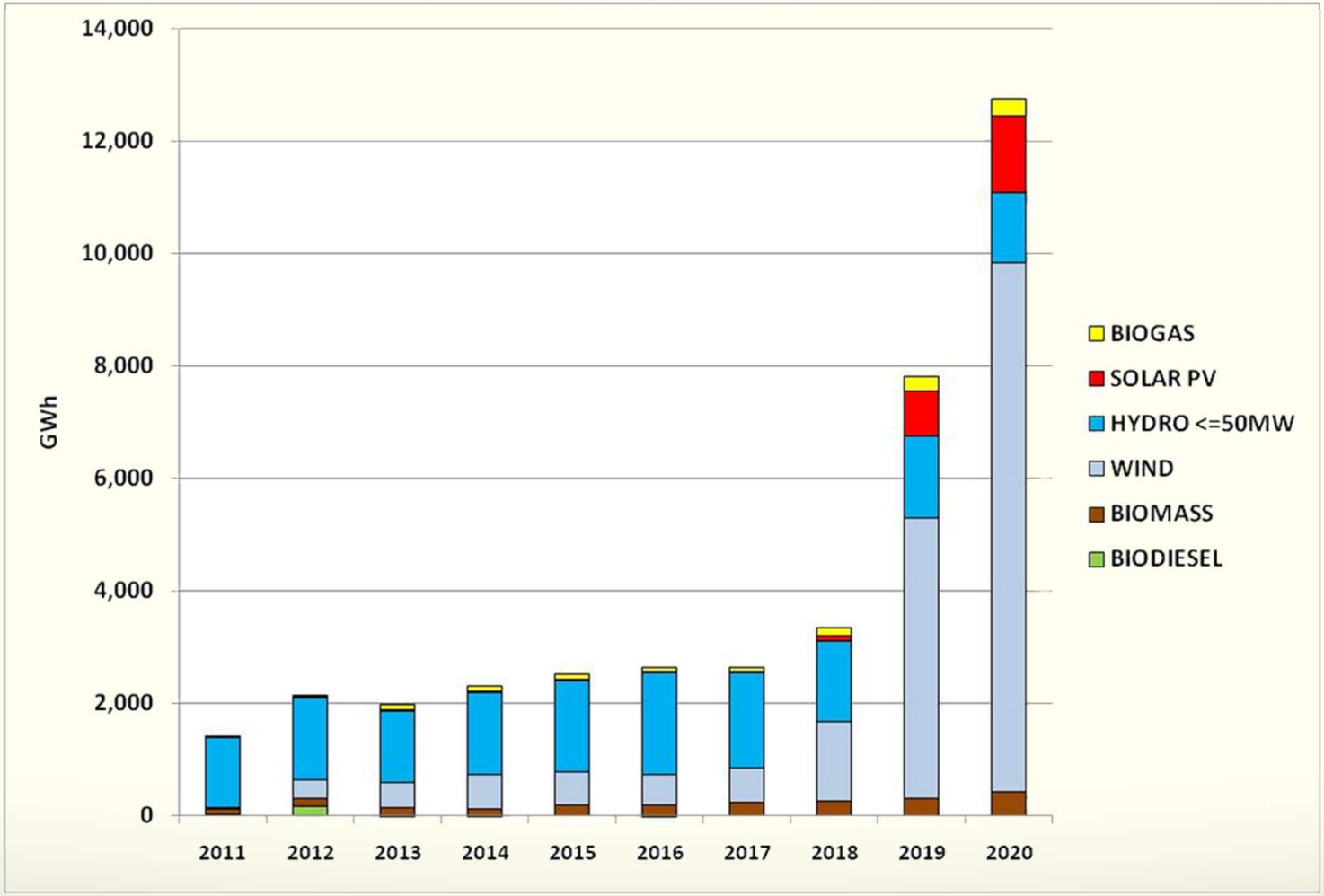
… AND SOLAR ENERGY

JANUARY (SUMMER)
DAILY SOLAR IRRADIANCE



JULY (WINTER)
DAILY SOLAR IRRADIANCE

RELATIVELY RECENT RAMP-UP OF RENEWABLE ENERGIES…

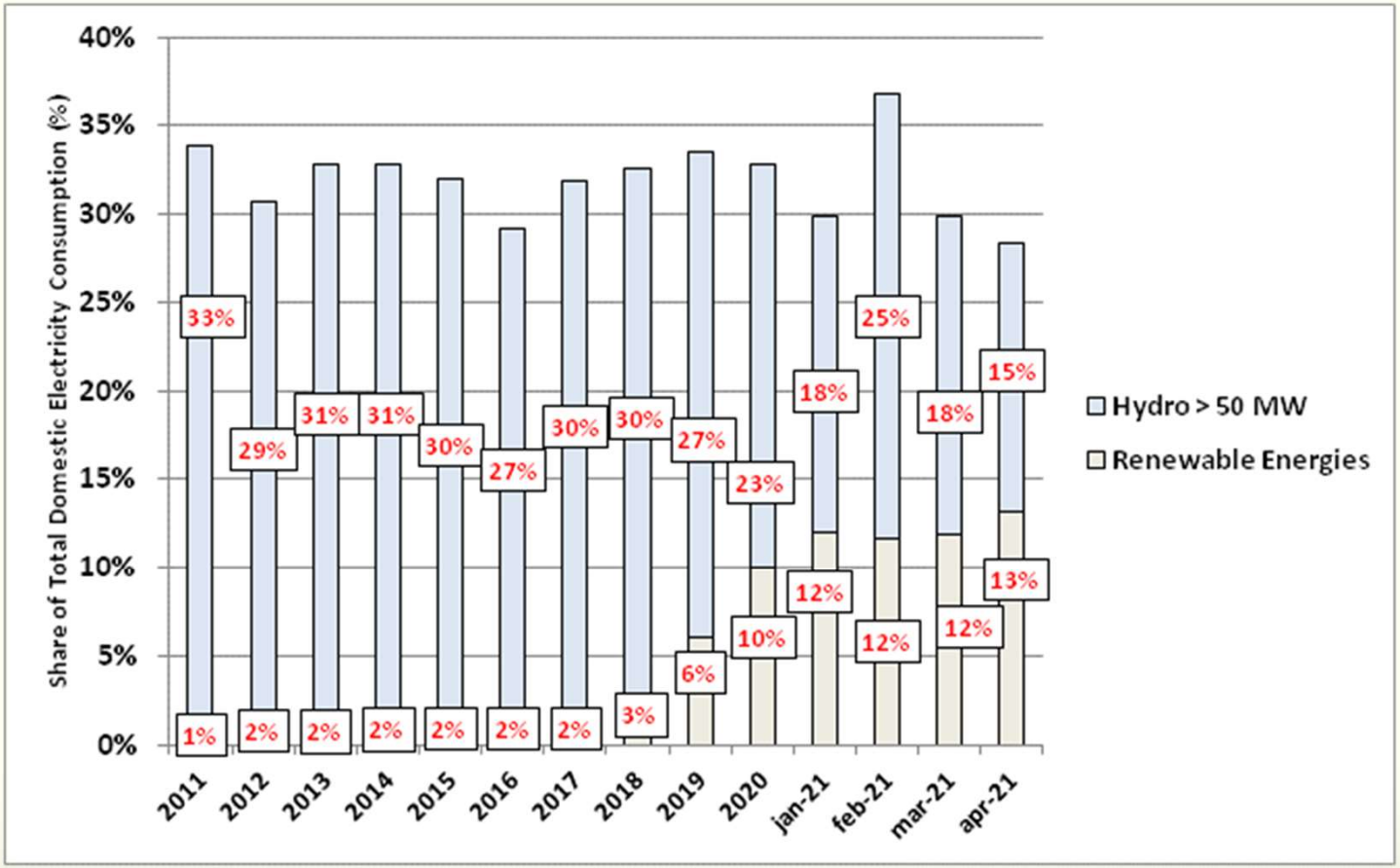


Source: CAMMESA Annual and Monthly Reports

…WITH A SWIFT DEPLOYMENT OF WIND AND SOLAR PV FARMS

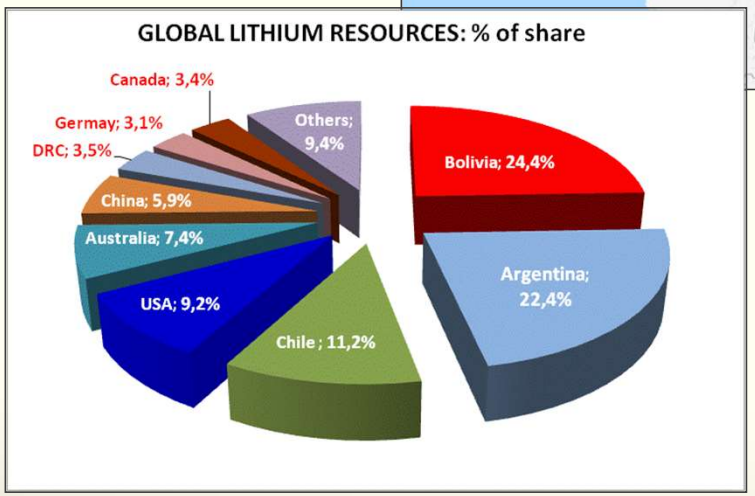
http://energiasdemipais.educ.ar/mapa/#tab-solar

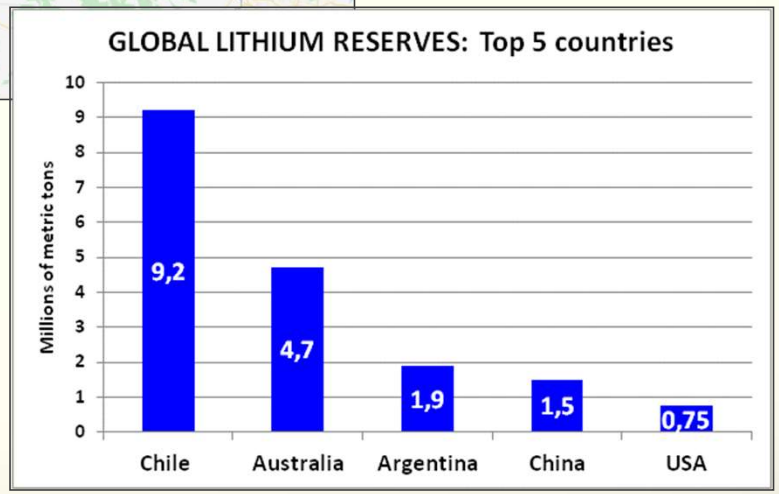
AND CLOSE TO 40% PENETRATION OF HYDRO + RENEWABLE ENERGIES IN POWER GENERATION



Source: CAMMESA Annual and Monthly Reports

HIGH IN THE RANK OF THE UPCOMING LITHIUM RALLY





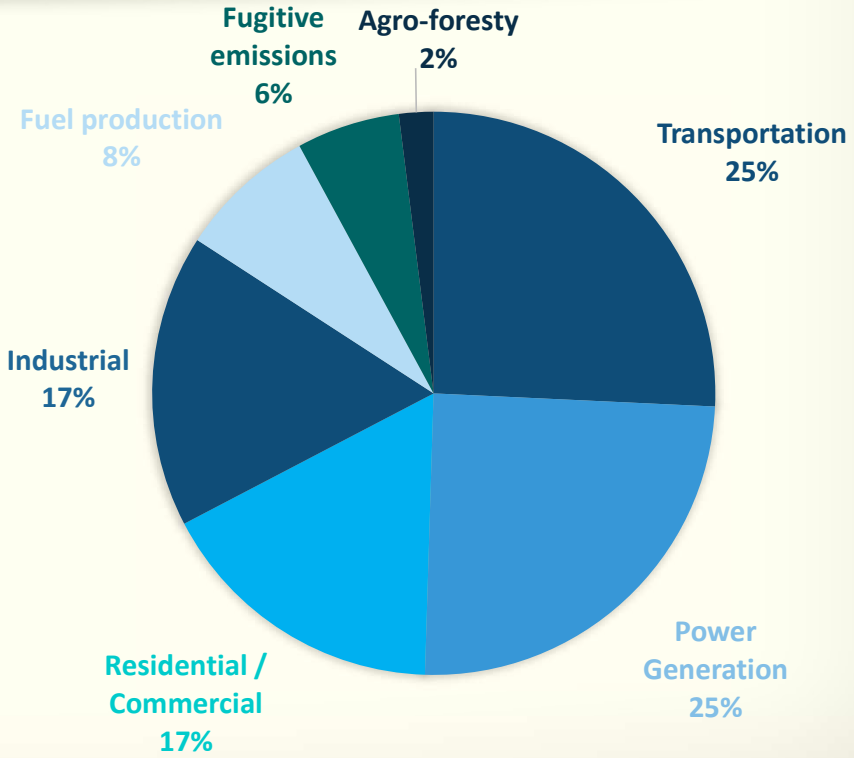
https://batteryindustry.tech/latin-americas-lithium-triangle-argentina-bolivia-and-chile-hold-more-than-half-of-the-worlds-lithium-deposits/

ENERGY RELATED CO_2 EMISSIONS: BELOW WORLD AVERAGE

EMISSIONS FROM FOSSIL FUEL COMBUSTION

	ARGENTINA	WORLD
$MtCO_2e$	183.4	33.513
tCO_2 /Toe	2.14	2.35
tCO_2 /capite	3.85	4.42
KgCO2/ GDP (PPP) 2015 USD	0.2	0.26

Source: Argentina National GHG Inventory 2019 (2016 based) and own calculations



Source: Argentina National GHG Inventory 2019 (2016 based) and own calculations

ARGENTINA ENERGY POSSIBILITIES

RENEWABLES	• Wind • Small/medium Hydros • Solar • Transmission Lines/Batteries/Demand Management
NATURAL GAS DEVELOPMENTS (Vaca Muerta)	• LNG exports
HYDROGEN	• Green and blue with CCS
NUCLEAR DEVELOPMENTS	• SMR/ 3rd Generation Reactors
ELECTROMOBILITY	• Infrastructure
ENERGY EFFICIENCY	• Industry • Buildings • Homes • Services
LITHIUM	

NECESSARY CONDITIONS FOR ENERGY INVESTMENTS

1. **ECONOMIC/FINANCIAL STABILITY**
   (Lower cost of capital)
2. **STABLE and ACCEPTED GOVERNMENT POLICIES**
   (Rules and Regulations)
3. **PUBLIC/PRIVATE PARTNERSHIP/COOPERATION**
4. **WORLD FINANCING - INSTITUCIONAL/PRIVATE**

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THANK YOU

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