

Energy Transition in Islamic Republic of Iran

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Our religious leader Imam Ali has said:

**Knowledge is the root of all goodness and
ignorance is the root of all evil.**

Iran's Strength Points for Oil & Gas Industry

We have

- ✓ The first rank of total oil and gas reserves in the world.
- ✓ Having 32 trillion cubic meters of gas reserves (the second rank of gas reserves in the world after Russia).
- ✓ Having an exceptional territorial position to become the energy hub in the region.

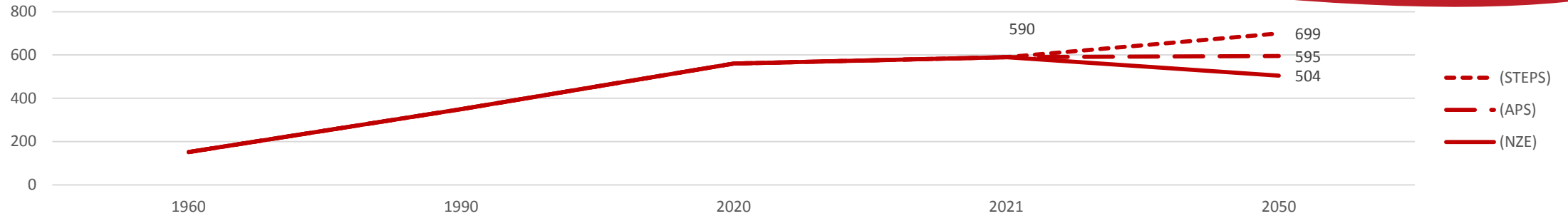
We have been able to do despite of the sanctions

- ✓ The **third place in gas production** in the world after the United States and Russia.
- ✓ **Growth of rich gas production** from 500 million cubic meters in 2016 to 1000 million cubic meters in 2022.
- ✓ Increasing the **export of natural gas** from about 15 million cubic meters per day in 2016 to 45 million cubic meters in 2022.
- ✓ The first country in the region in terms of **having nationwide pipelines network** (with more than 36 thousand kilometers).
- ✓ The fourth country in the world in terms of **gas distribution network** (with more than 320 thousand kilometers).



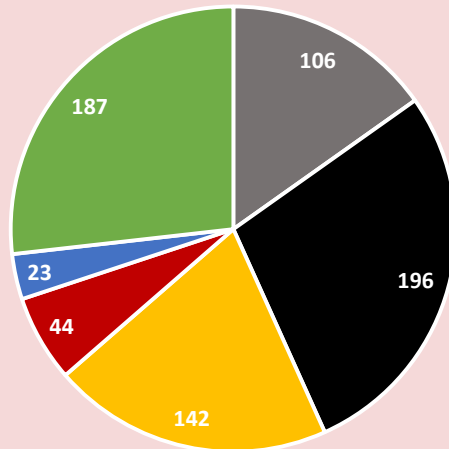
World Primary Energy Consumption (qBtu)

IEA – World Energy 2023



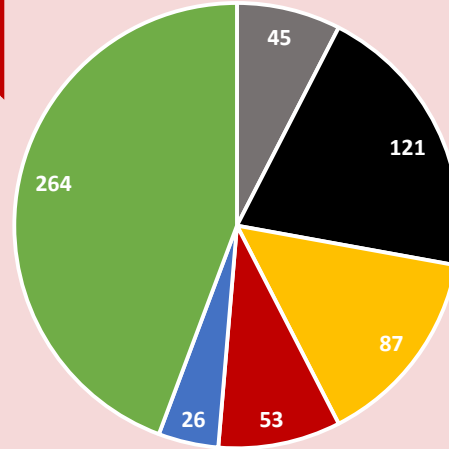
Stated policies Scenario (STEPS)

48%



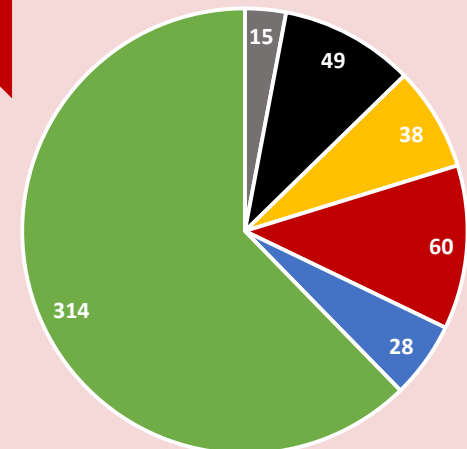
Announced Pledges Scenario (APS)

35%



Net Zero Emission by 2050 (NZE)

20%



Coal

Liquids

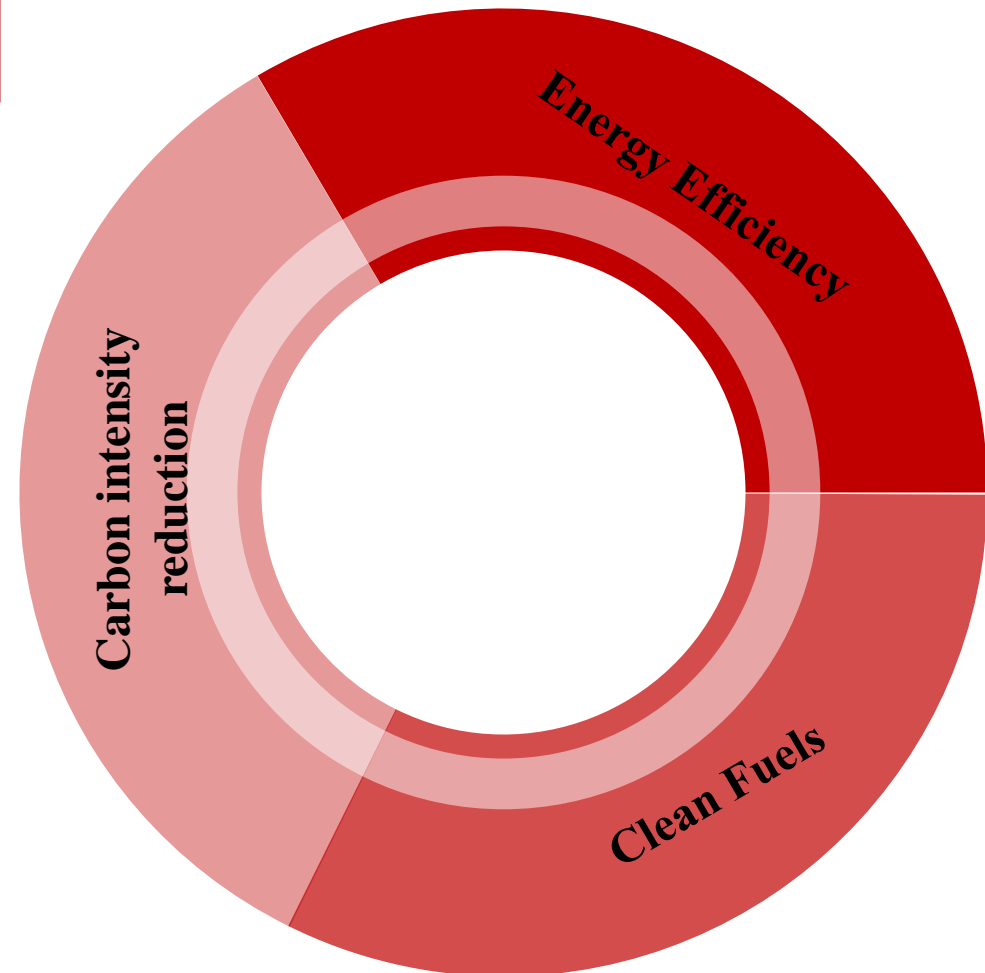
Natural gas

Nuclear

Hydro

Other Renewables

Energy Transition in Iran



Carbon intensity reduction

Carbon Capture and Storage

Flare Gas Recovery

Reduction of Oil and Gas Leakage (Leak Detection for pipelines and Storage)

Clean Fuels

Blue and Green Hydrogen Production

Biofuels (Bioethanol and Biodiesel)

Gasification of Oil Refinery Waste for Power and Hydrogen Production

Renewables (Solar and Wind)

Energy Efficiency

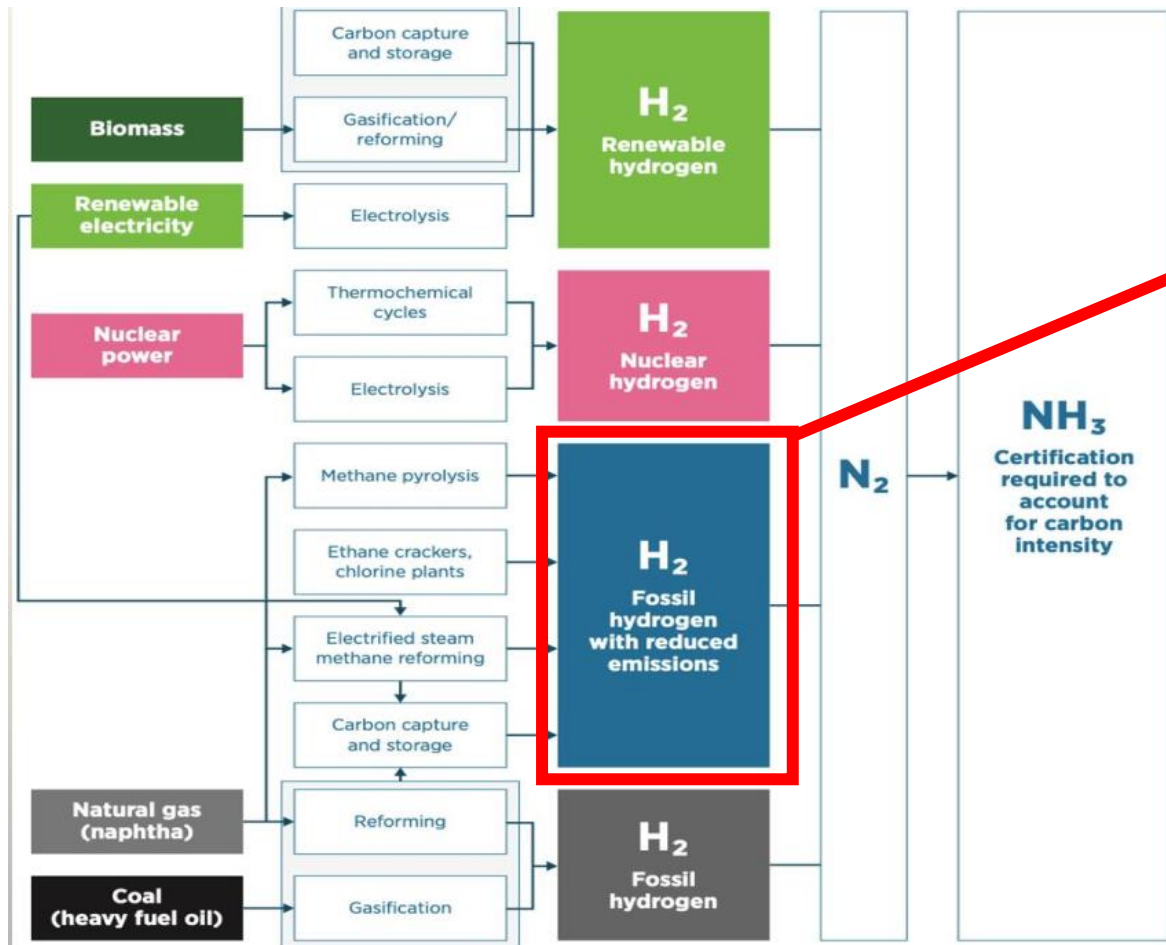
CHP & CCHP (Exchangers, HRSG, Movers, Controllers, ...)

Waste oil and Tail Gas Incinerators

Process/Heat Integration (Software, Technology, ...)

Digitalization

Production of Blue Ammonia as H₂ Carrier

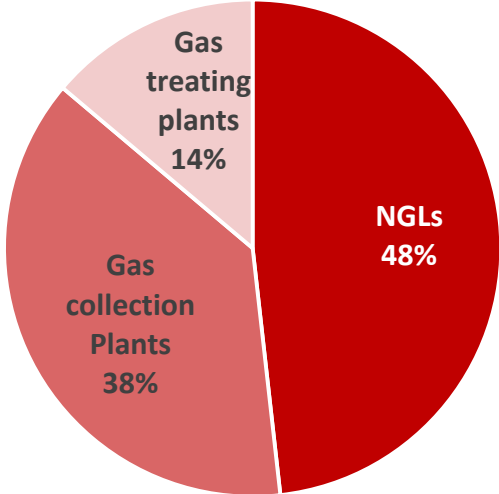


Blue Ammonia Capacity: 450 KT/Y
 Start-up: 3 Y
 Investment: 230 M\$

Flare Gas Reduction



Some plans for collecting flare gases will be completed by 2026	NGLs	<ul style="list-style-type: none"> • NGL 3100 • NGL 3200 • Kharg NGL
	Gas collection	<ul style="list-style-type: none"> • in East Karun
	Gas Treating	<ul style="list-style-type: none"> • Phases in South Pars Gas Refinery Company • In other gas refineries



CO₂ gas injection for a heavy oil reservoir in south of Iran

In this project, the effect of the injection of carbon dioxide gas and the **exhaust gas of the Ramin power plant**, which is located in the vicinity of the Ramin oil field, on the Asmari reservoir of this field has been investigated, and the laboratory results show that the injection of carbon dioxide will significantly increase the recovery factor in the Asmari reservoir of the Ramin field.



Some fields of technological cooperation based on the strategic plan of the Ministry of Oil

Exploration and underground resources

- Improving the qualitative and quantitative interpretation of seismic data.
- Operation design and geophysical data collection.
- Studies and modeling of hydrocarbon system and geochemistry.

Reservoir Engineering

- Improving the knowledge of simulation and development of history compatibility check software.
- Fractured reservoir
- Sour crude oil

Processing and Transfer

- Increasing pressure and multiphase fluid measurement of the well.
- Wastewater treatment
- Hydrocarbon fluid transmission pipelines.
- Gas sweetening and sulfur recovery.

Drilling

- Construction of down hole equipment and optimization of drilling operations.
- Design manufacture of vertical, horizontal and directional drilling equipment/specialized drilling services.

Production and exploitation

- Reducing construction damage, optimizing production scenarios and increasing efficiency.
- Artificial extraction and related equipment manufacturing.

Storage

- Underground storage
- Smart storage (intelligent control tools, ...)

Some fields of technological cooperation based on the strategic plan of the Ministry of Oil

Refinement

- Petro refinery process

Transfer and distribution of products

- Covering
- Improving capability in field of rotating equipment engineering

Production and petrochemical products

- Production of polymer and non-polymeric catalysts.

Digital transformation

- Digital transformation in upstream and downstream industries.

Development of management and human resources

- Recruitment, training and performance management of employees and managers and development of organizational culture.

Health, Safety, and Environment

- HSE

Iran International cooperation Opportunities



• Technical

Technical cooperation and technology transfer such as:
CCS, CCUS, LNG, Hydrogen, Intelligence systems, Digitalization, etc.



• Capacity building

Empowerment and capacity building such as:
Consulting, training, developing strategic and action plans, etc.



• investment

Bilateral and multilateral investment opportunities:

- ✓ In energy and environment plans such as: JCM, JICA, NAMAs, ...
- ✓ Low cost human resource



• networking

- Development of regional and international knowledge exchange networks such as: Iran's membership in relevant international institutions

Thanks for your attention

