



YEMEN PRESENTATION

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ORGANIZATION: National Atomic Energy Commission (NATEC)-YEMEN

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Yemen

Overview



SAUDI ARABIA

NAJD

ARAB
DRY
SANCTU

RUB' AL

OMAN

KHALI

NAJRĀN

Sanāw

Thamūd

Şabyā
Jizān
Abū
'Arīsh

Şa'dah

Şalālah

Red Sea

ARABIAN PENINSULA

Al Ghaydah

YEMEN

Say'ūn
Tarīm

Al Luhayyah
Jabal an Nabī Shu'ayb 3760 m
(12,336 ft)

Sana'a

Qishn

Al Hudaydah

Hammām

Ash Shihr
Al Mukallā

Arabian Sea

Dhamār
Yarim

Habbān

Ibb
Qa'ṭabah

Lawdar

Mocha

Ta'izz

Shaqrā'

Aden

Hadīboh

Stēroh

ETHIOPIA

DENAKIL

Gulf of Aden

Caluula

INDIAN OCEAN

DJIBOUTI

Bender

Qandāla

diya

Awash

- **Official name:** Republic of Yemen
- **Location:** Southwestern corner of the Arabian Peninsula (Asia)
- **Area:** 466,000 km (2).

- **Coastal Line:** 2,009 km.

- **Major Cities:** Sana'a (capital), Aden, Taiz, Hodeidah, Mukalla, Ibb, and Hajja.

- **Main Ports/Export Terminals:** Aden, Al Hudaydah, Bir Ali, Ash Shihr/Al Mukalla, Mocha, Nishtun, As Salif-Ra's Isa.

- **Population:** 23 million according to 2006 census.

- **Population Distribution:** Urban areas 26.5%, Rural areas 73.5%.

- **Annual Growth Rate:** 3.5% per annum.

- **Work Force (by sector):** Agriculture 53%, Public service 17%, Construction 7%, Manufacturing 4%, other 19%.

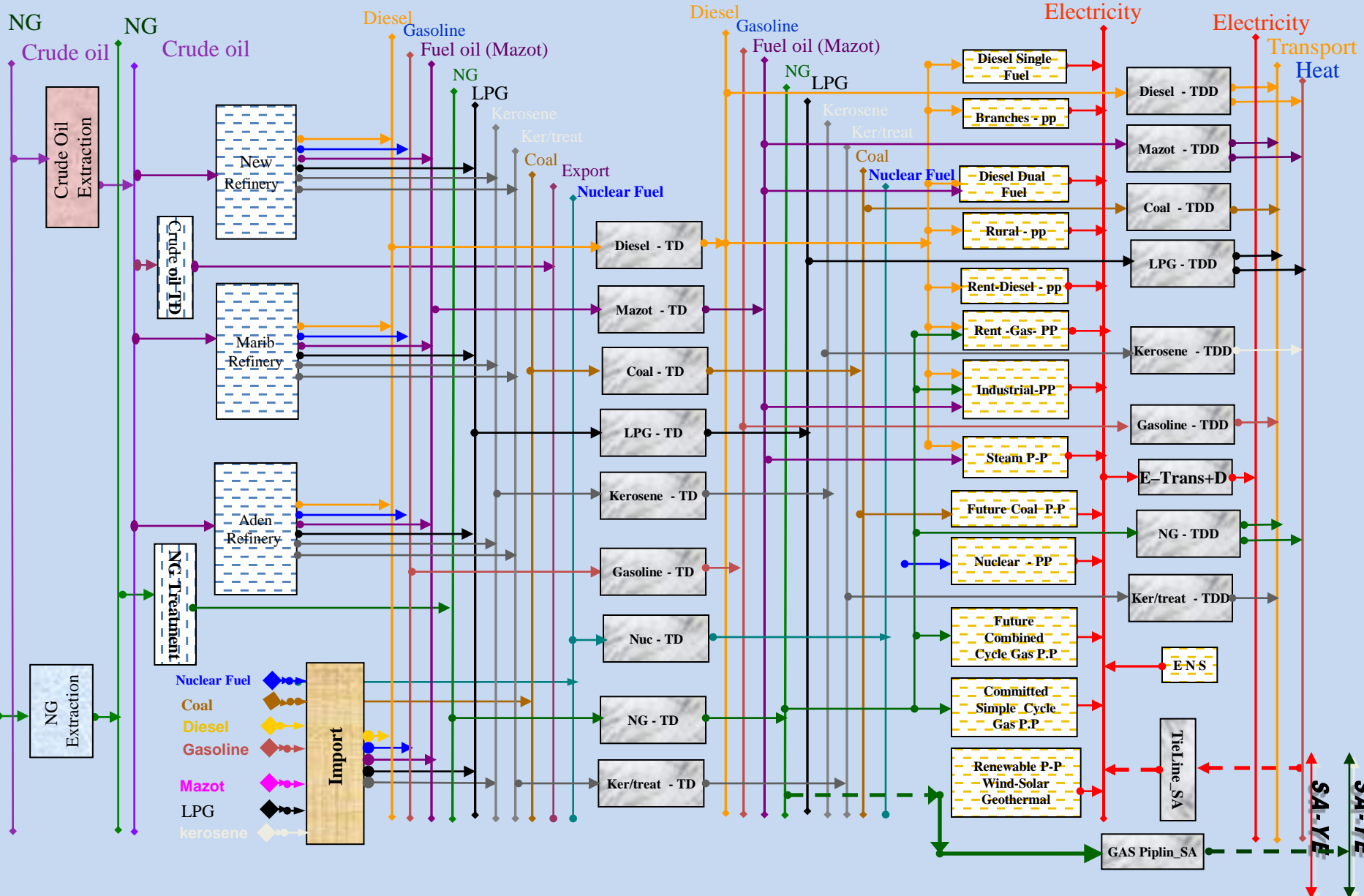
- **Natural Resources:** Minerals resources, fisheries, natural gas.

- **Economy:** Crude oil refining, cement, fisheries, livestock, agricultural products

Yemen

Energy System

Yemen Energy Flow Chart – Levels, Technologies, & Energy Forms



1. Status and Prospects of a Nuclear Power Programme in Yemen

National Atomic Energy Commission (NATEC) in lines:

- *(NATEC) established in 28 April 1999 by decree Number 126 , as the sole regulatory authority who can deal with the peaceful of radiation applications and activities in the country, and this decree empowers NATEC to:*
 - *develop safety principles and criteria.*
 - *establish regulations and issue guidance.*
 - *enforce regulatory requirements.*
 - *communicate directly with governmental authorities at higher levels when needed.*
 - *Liaise with regulatory bodies of other countries and with international organizations to promote cooperation and the exchange of regulatory information.*
 - *The decree also assigns to NATEC the responsibility for promotion of the peaceful use of atomic energy.*
 - *Decree No. 56 -2008, reorganize NATEC Board. (Prime Minister is NATEC Chairman).*

2. Yemen Nuclear Energy Consideration

- Yemeni government strategy is seeking for a radical solution to the electricity energy through partnership with the international organization such as the International Atomic Energy Agency in reinforcement the technical cooperation in the field of applying the nuclear technology (nuclear power) as medium and long term option to cover not only for power generation ,but also for water desalination as they are the backbone of the life.*

Yemen Plans

- 1. Yemen planning to develop the legislative and regulatory frameworks of institutional atomic energy in Yemen, which would contribute to the achievement of success factors for the implementation of the strategy .*
- 2. establishing the national team who can deal with power projects's requirements from the all sectors in the governments .and qualify them to be capable dealing with the nuclear sciences.*
- 3. train a national team on the IAEA power project management Programs in preparation to deal with nuclear research station.*
- 4. establish a national academic institute on nuclear science that it help and accelerate the process of gaining and accumulating the knowledge of nuclear science.*

Yemen Requirements

- *Some experts from the IAEA to develop the legislative and regulatory frameworks in Yemen.*
- *Issue the Nuclear Law in Yemen , because through this law (NATEC) can implement and develop the nuclear project in Yemen.*

Yemen Policy

- *Yemen Criteria in the field of using nuclear technology (nuclear power) for power generation and water desalination is the long-term policy carefully based on a set of national principles and knowledge with steady and confident, due to the intensity of this area of the large financial investments and because of its impact significant on the overall development in Yemen (economic and social) and other aspects of public life in the country, also to provide stability and security of living moreover prosperity for future generations by providing electric power which is the backbone of economic development , addto that the water which is the backbone of life.*

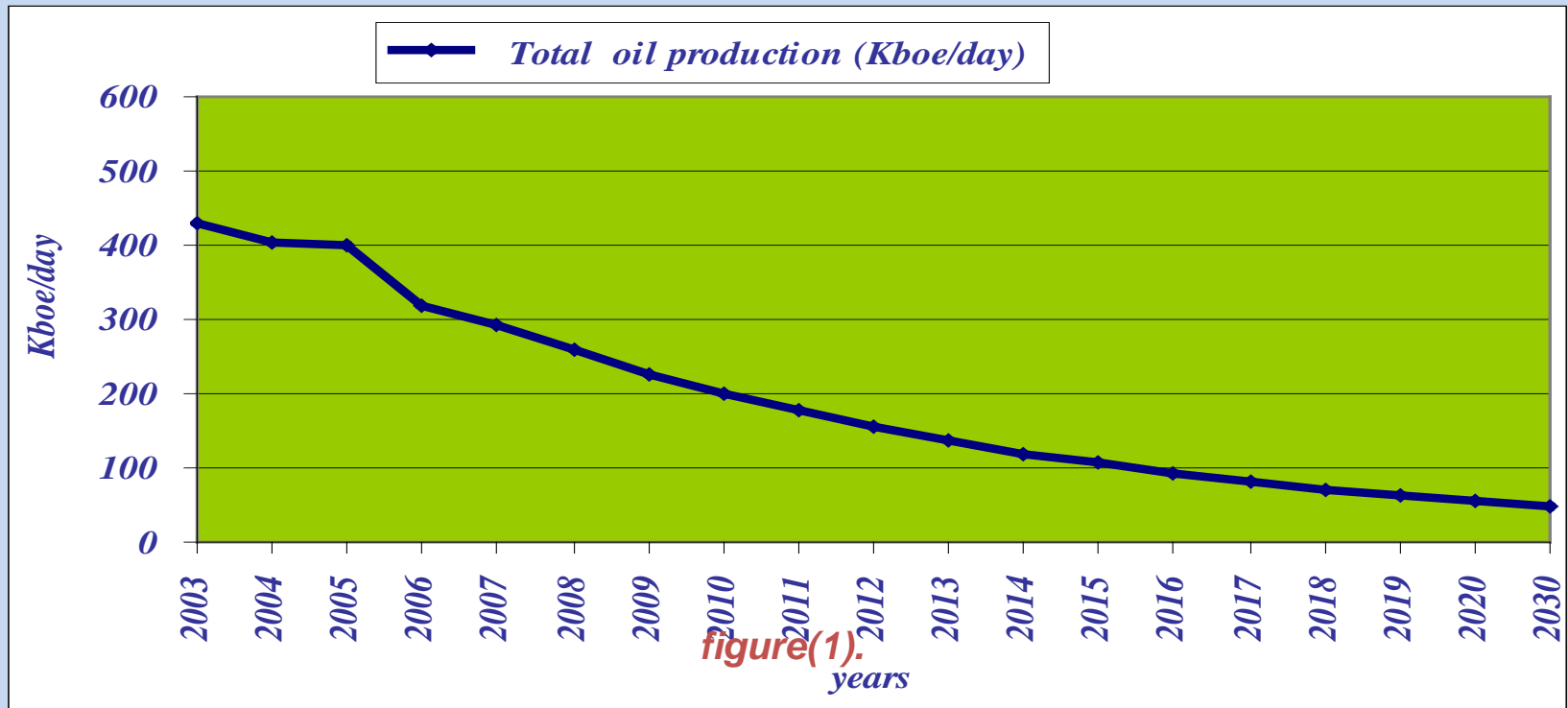
Yemen Actions for Starting

- *develop safety principles and criteria.*
- *establish regulations and issue guidance.*
- *enforce regulatory requirements.*
- *communicate directly with governmental authorities at higher levels when needed.*
- *Liaise with regulatory bodies of other countries and with international organizations to promote cooperation and the exchange of regulatory information.*

Yemen methodology in implementing & developing the nuclear technology project

First : in last three years ago the national atomic energy commission has formed a national team from several sectors in the government to evaluate the energy system in the country through preliminary study.

In fact, this study show that oil is the main resource of energy in the country. and our resource become decrease more and more from (430kbe/day in 2003 - 187kbe/day in 2011) as it's shown on the figure(1).



Yemen methodology in implementing & developing the nuclear project

- *Second: the National Atomic energy Commission has complete preparing the first draft of comprehensive nuclear law with assistance of the IAEA on March 2007 and submitted to the Prime Minister for consideration, but due to some political crisis this law didn't approved until now .*
- *the draft law recognizes the split between the regulatory and promotional activates of nuclear energy.*
- *through this low (NATEC) hope to implement and develop the nuclear project in Yemen.*

The driving forces for expanding a nuclear power programme in Yemen

- Yemen has a shortage in energy resources.
- The rising in fuel prices.
- Reduce the emissions that comes from the energy Stations.
- Reduce the construction on Yemen Energy stations.
- Accelerate the development progress to build factories that absorb the labor force.

The impediments for expanding a nuclear power programme in Yemen

- Nuclear Power Programme need a huge investments to start either to make the study or to build the infrastructure. And these two requirements Yemen can not afford these expenses.
- Political instability.
- Persuading the parliament to take the advantage of the features of the nuclear technology (to convince the community).

Yemen N.E.S in 2030 and in 2050

- We hope that in 2030 Yemen can get support to build a small station with capacity of 5 GW to cover the shortage in Yemen Power Generation. By the time this nuclear station can be provide the neighboring countries such as Oman, Saudi Arabia and others.
- strength the Yemen network.

Yemen role in deployment of nuclear power plants by foreign suppliers

- Yemen enjoyed by geographical location , because it links between the Arab countries in the south
- And strengthening the electric grid and enhance delivery system in the region.

Back-end fuel cycle services for national nuclear power programme

- The national Atomic energy Commission has arranged some rules related to this subject, but the parliament did not approve these arrangements because it needs some modifications and additions to keep secure the movement of system.

The concept of a sustainable nuclear energy system in Yemen

- Means that Yemen can get clean and continued power energy with a cheap price and Eco-friendly.

Cooperation with other countries in energy projects, nuclear and non-nuclear

- We have cooperation in some Arab countries that have passed us in the last two decades such as Jordan and Syria in the field of radiation protection.

Possible drivers and impediments for cooperation with other countries in nuclear power projects and indicate the priorities

- We may get some cooperation with south Korean experts in the field of construct the infrastructure of nuclear Station.
- Since we have previous experiment with Korean cooperation in the field of extracting the Natural gas in Yemen.
- The impediments of this cooperate it need financial support.

select vendors Do you plan to build strategic partnerships? Which factors would affect your decisions/selections?

- Yemen will select the vendors through the IAEA's assistance since it's the first experiment to enter this field.

Thank you for your attention