



وزارة الطاقة و المناجم  
Ministry of Energy and Mines

# Algerian National Hydrogen Development Strategy

## - Roadmap -



# Summary

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- Introduction
- Potentialities and assets of Algeria
- Roadmap for the development of Hydrogen in Algeria
  - Strategic objectives
  - Deployment phases
- Action plan for the implementation of the roadmap
- Conclusion

# Introduction

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Algeria has distinguished itself on the regional and global energy scene as being a safe and reliable player, due to its fossil resources, particularly natural gas, its vision of the development of the sector, its openness to dialogue, cooperation and partnership as well as to the efforts made in the different segments of the hydrocarbon value chain.

Our country is committed to the path of renewable energies in order to provide sustainable solutions to environmental challenges, contribute to the global effort to preserve the environment, and fight against global warming.

With renewable energy potential and solid experience in the industry and the energy market, Algeria is positioning itself as a major regional player, not only ensuring a smooth energy transition in its territories but also continuing to fully play its role as an energy supplier to all its traditional partners/customers.

The Algerian Government has set among its priority objectives the development of hydrogen, through the approval of a roadmap for the development of this sector.

# Potentialities and assets of Algeria



Renewable  
Energies  
potential



Energy  
Infrastructure



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Mining  
Domain



Industrial  
tissue



*Algeria has several assets enabling  
it to become an important regional  
and international player in the field  
of renewables energies .*

# Potentialities and assets of Algeria



Renewable  
Energies  
potential

## *“Important potential in Renewable Energies”*

- A **solar field** among the largest in the world. The global solar energy received per year is more than 2000 kWh/m<sup>2</sup>, the duration of sunshine on almost all of the national territory exceeds 2000 hours annually and can reach 3900 hours (Highlands and Sahara).
- **wind potential** in the highlands and in the South.



Energy  
Infrastructure



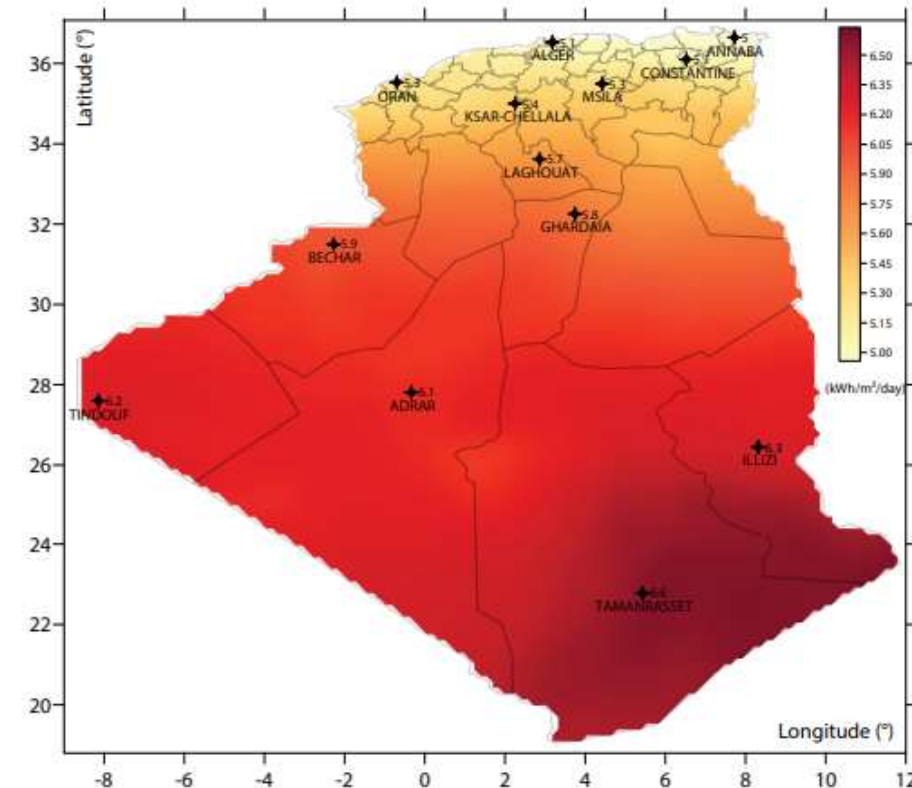
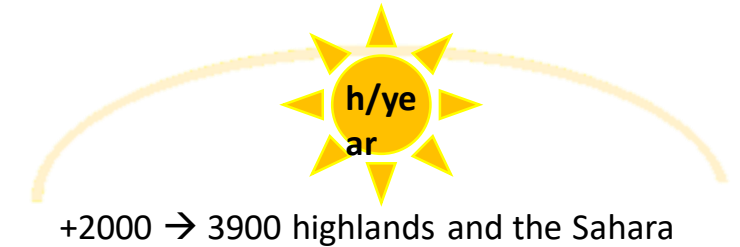
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# Potentialities and assets of Algeria



Renewable  
Energies  
potential

## ***“The national renewable energy program”***

### **Development prospects (15 000 MW PV program)**



Energy  
Infrastructure

- The renewable energies program aims to achieve a total capacity of 15 000 MW in the horizons of 2030.



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- The first phase was launched through the implementation of 1 000 MW.
- In a second phase, Sonelgaz was assigned to implement the renewable energies program, as it launched a national and international tender for the completion of 15 power plant projects powered by solar energy, distributed in 11 states in Highlands and Sahara, with a total capacity of 2000 MW, with quotas ranging from 80 to 220 MW for each project.



Mining  
Domain



Industrial  
Tissue

# Potentialities and assets of Algeria



Renewable  
Energies  
potential

Covering the entire oil & gas value chain, including:

## ***“ Major gas pipeline networks”***

A transport capacity by pipeline of 406 MTEP

A gas transport system for the national market with a total length of more than 23 000 km.



Energy  
Infrastructure



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## ***“Extensive and robust electrical network”***

Transport network of nearly 33,000 km

Distribution network of more than 360,000km

Production capacity

25,000 MW + 410 MW in renewable energy .



Mining  
Domain



Industrial  
Tissue



# Potentialities and assets of Algeria



Renewable  
Energies  
potential



Energy  
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Mining  
Domain



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## ***“ Active and efficient Research Centers & Universities ”***

109 higher education schools including :

- 54 universities,
- 09 University centers,
- 11 National Higher Schools,
- 35 Higher Schools.

# Potentialities and assets of Algeria



Renewable  
Energies  
potential

## ***“Mining Domain”***

Significant mining reserves, particularly with regard to the rare materials used in the production of batteries.



Energy  
Infrastructure



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- Lithium: appreciable concentrations have been identified in Algeria.
- Zinc: a structuring project at Oued Amizour for the production of zinc and lead.



**Mining  
Domain**



Industrial  
Tissue



# Potentialities and assets of Algeria



Renewable  
Energies  
potential

## « Diversified Industrial Tissue »

A growing number of small and medium-sized businesses.

A long experience in:

- Natural gas industry,
- Liquefaction,
- Transportation,
- The production of gray hydrogen, ...



Energy  
Infrastructure



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## Panel Producers \_ Photovoltaic



Mining  
Domain



Industrial  
Tissue



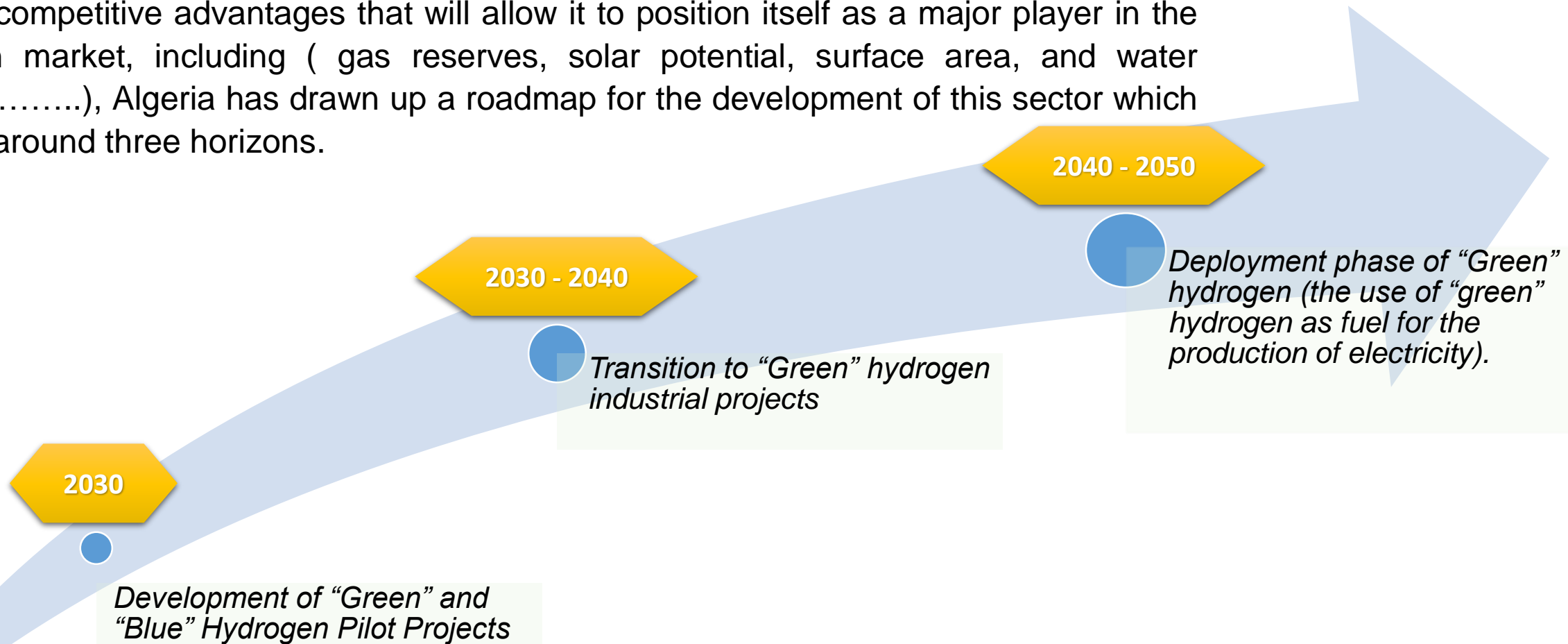
# Roadmap for the development of Hydrogen in Algeria



- Diversification of the energy mix
- Reduction of local consumption of fossil fuels
- Establishment of an ecosystem for the development of clean hydrogen
- Technological mastery of the entire hydrogen value chain
- Establishment of a national economy of hydrogen and its derivatives
- Constitution of a Hub for the production and export of hydrogen.

# Roadmap for the development of Hydrogen in Algeria

With the competitive advantages that will allow it to position itself as a major player in the Hydrogen market, including ( gas reserves, solar potential, surface area, and water reserves .....), Algeria has drawn up a roadmap for the development of this sector which revolves around three horizons.



# Roadmap for the development of Hydrogen in Algeria

## Horizon 2030 :

Proposals for pilot projects aim to develop technological mastery in the Operation & Maintenance of hydrogen systems and are part of the strategic vision for the development of hydrogen.

These projects, the size of which will not exceed ~2 to 10 MW, will be carried out in partnership to share risks and benefit from the expertise of pioneering companies in the field of hydrogen.

The pilot projects proposed below are based on a technology watch reporting on projects already carried out dealing with similar concepts.

### Project 1



- Experimental pipeline loop Natural gas/hydrogen, separation unit, storage in salt cavities ( Hassi R'mel )

### Project 2



- Solar energy storage for isolated sites of Sonatrach

### Project 3



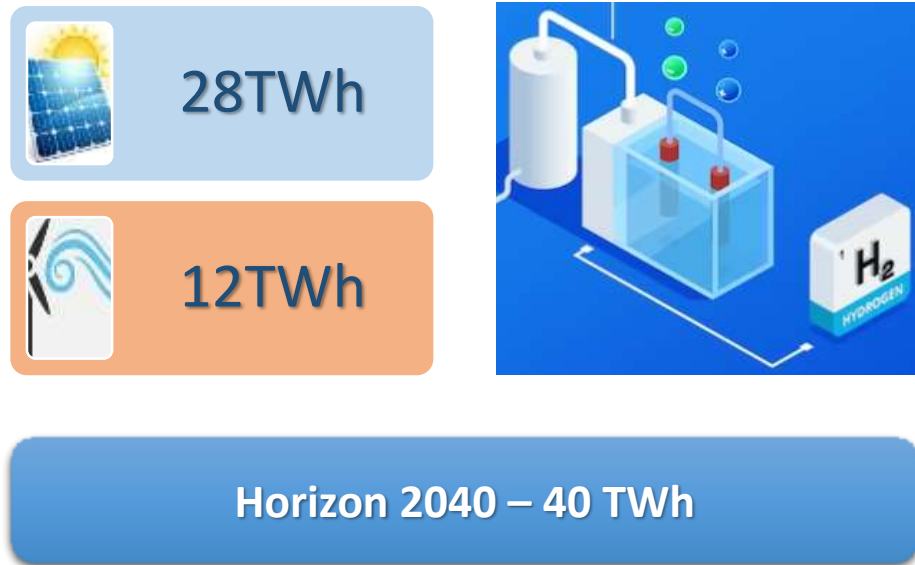
- Production of green ammonia or methanol (Arzew, Annaba, Souk ahras)

# Hydrogen development perspective in Algeria: investment

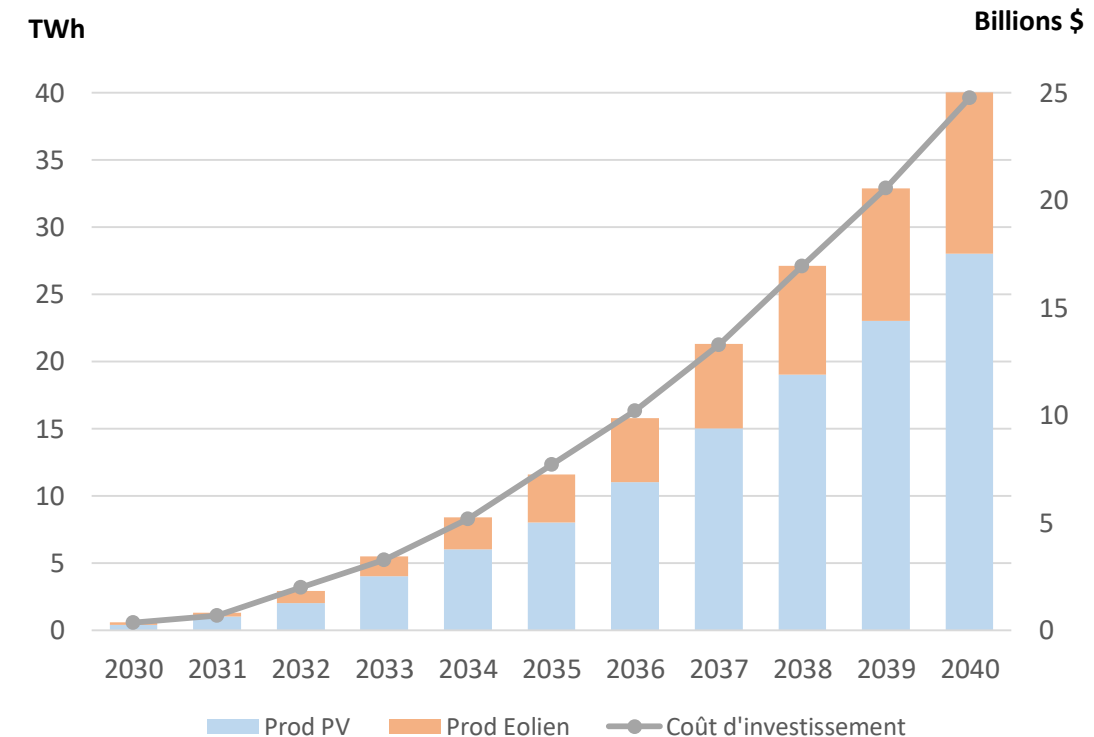
## Horizon 2030 and 2040:

A study was carried out covering the second phase of the hydrogen sector development roadmap, horizon 2030 – 2040, with the implementation of industrial-scale projects.

The projects cover the entire Green Hydrogen value chain (production & transport, excluding storage ).



~\$25  
Billion



# Conclusion

Algeria aims to make hydrogen a strategic vector of its energy transition program and its climate commitments. The roadmap will enable the transition from the production of gray hydrogen to blue and then green hydrogen, as well as the transition from pilot projects to industrial-scale projects.

The development of hydrogen will depend on several evolutionary factors, namely :

- The production costs of renewables & electrolysis;
- Technologies (Production, Storage and Transport);
- The development of competitive markets.



The potentialities and advantages offered by Algeria for the development of RE projects and those of the hydrogen sector represent significant competitive advantages; the success of these projects also depends on a transfer of technology as well as the sharing of risks through cooperation and a win/win partnership.

The success of a low-carbon energy transition tomorrow, ensuring energy security, reliability, abundance, sustainability and respect for the environment, is being prepared today through the exploration of all possible avenues of synergy.





**THANK YOU FOR YOUR ATTENTION**

