



ebn

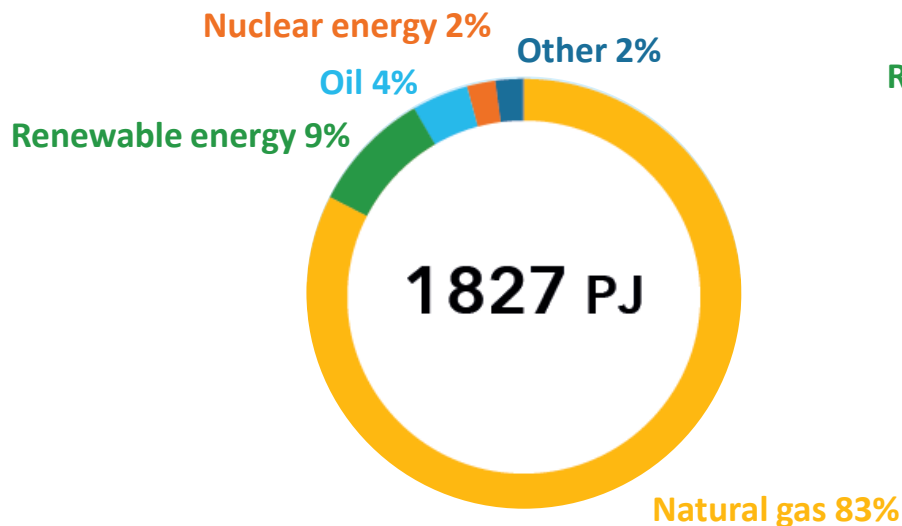
# O&G opportunities in the Netherlands

A Dutch exploration initiative in a mature basin

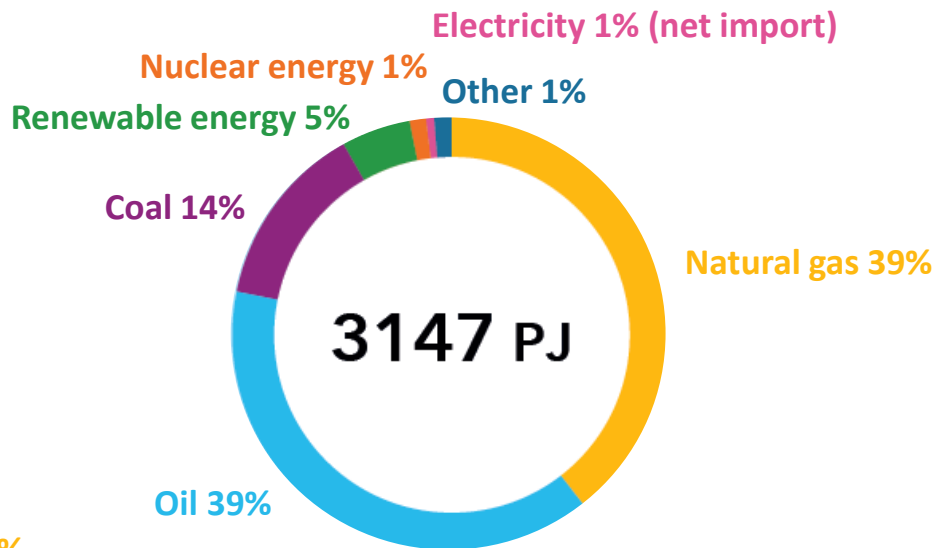
Sabine Korevaar, EBN

# Why do we need to explore?

## Energy generation



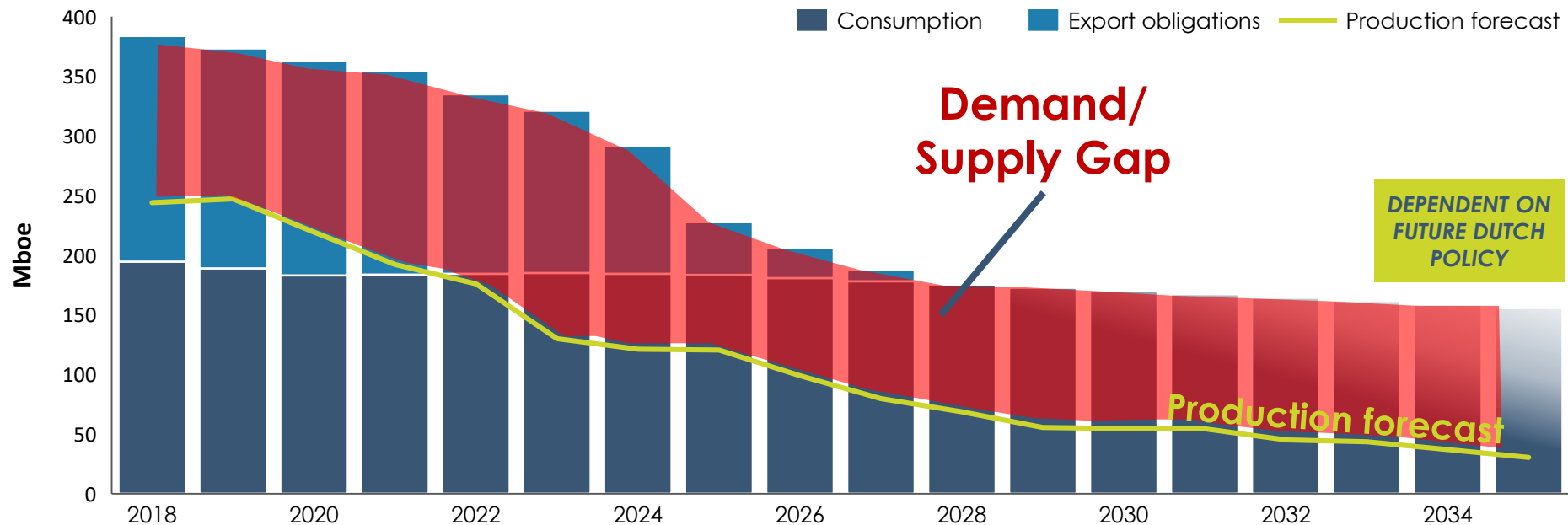
## Primary energy consumption



# The need for exploration

## The energy gap

Forecast of gas production and demand in the Netherlands (Mboe)



# O&G opportunities

- **The role of EBN**
- **The Dutch potential**
  - Businesscase for Dutch exploration
  - Your gateway to Dutch data and data analysis
- **Key take-aways**







## The role of EBN

# Who is EBN

- Industry partner & co-investor in Oil, Gas and Geothermal
- Non-operating partner in exploration and production (40%)
- Dutch State participant

**EBN facilitates the transfer of knowledge of the subsurface, facilities and economics**



**Return to Nature**



**Our Dutch Gas**



**New Energy**

# The Netherlands



Ministry of Economic Affairs  
and Climate Policy

## EBN

EBN is a company investing on behalf of the Dutch State in E&P. All shares are held by the state.

## State Supervision of Mines (SSM)

SSM monitors compliance with legislation and supervises on behalf of the Minister the exploration, production, transportation and storage of mineral resources.

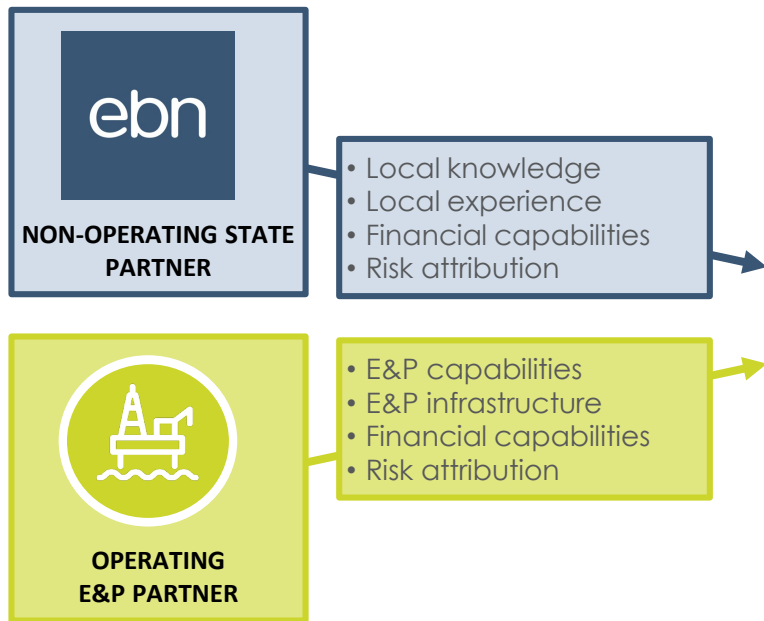
## TNO-AGE

TNO-AGE is advisor to the Minister on use of the deep subsurface.

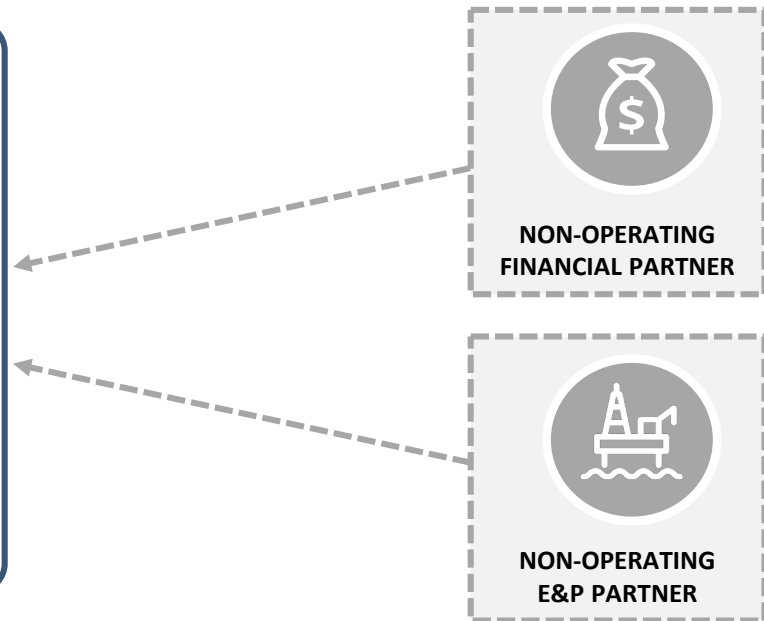
# EBN as your partner

By jointly investing in E&P, stakeholders share financial risks, thereby lowering the overall risk profile of their investment portfolio.

## Required partners



## Optional partners



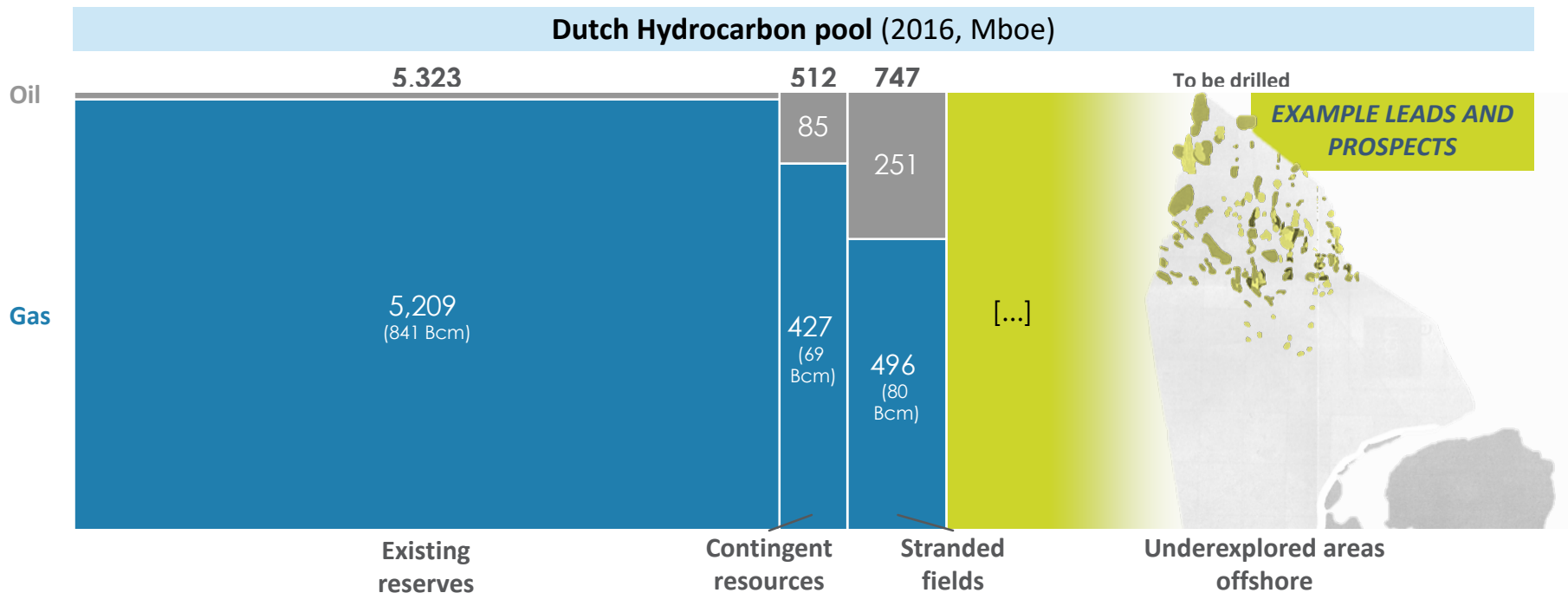


# The Dutch exploration potential



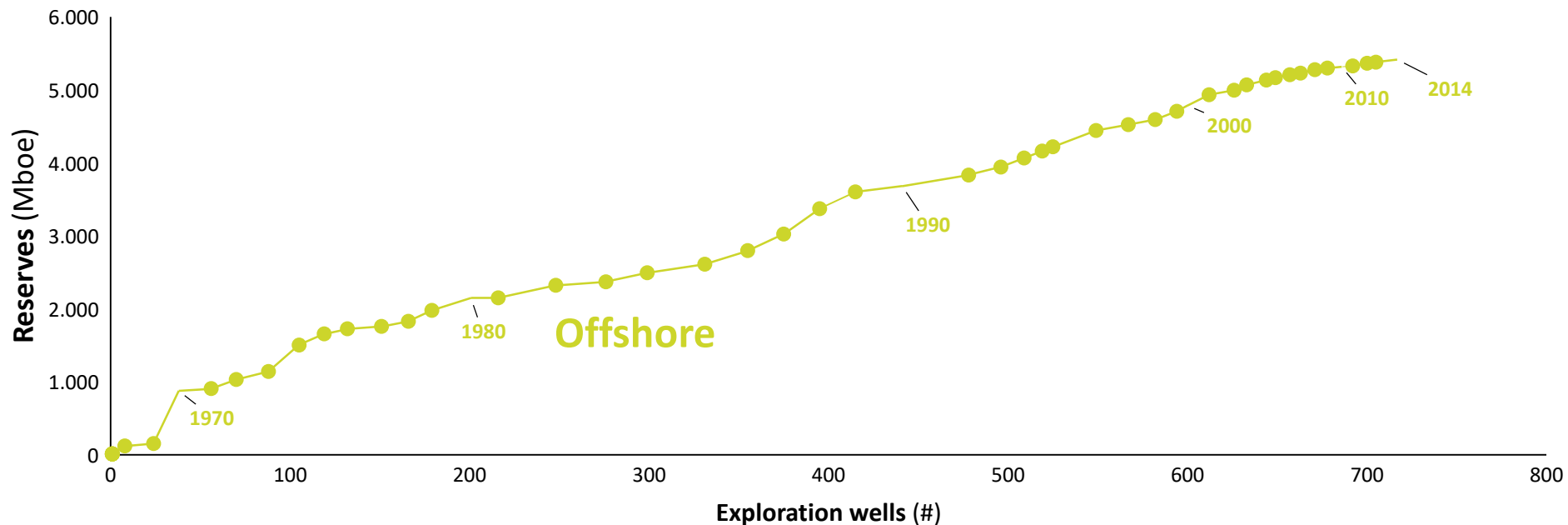
# The Dutch exploration potential

In addition to its existing reserves, contingent resources and stranded fields, the Dutch subsurface includes large underexplored areas offshore



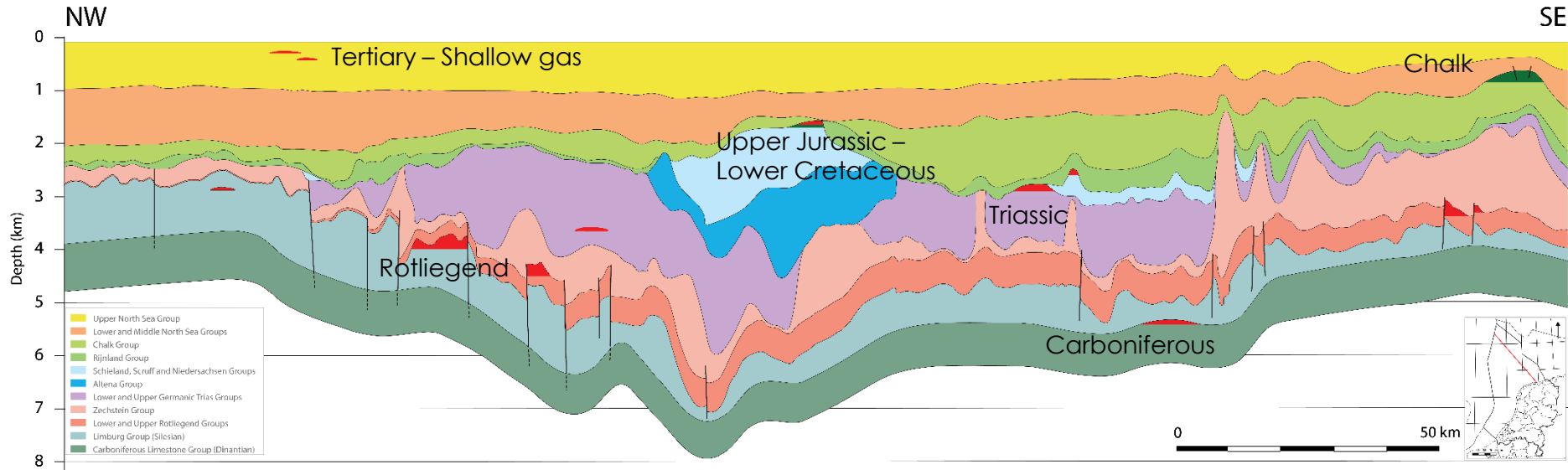
# The Dutch exploration potential

## Creaming curve of the Dutch HC reserves



# The Dutch exploration potential

## A highly diverse portfolio



- EBN performs **geological and geophysical studies** to locate new resources  
– results will be published on [www.ebn.nl](http://www.ebn.nl)

# The Dutch exploration potential

## The size of the price

### Initial inventory of largest underexplored area



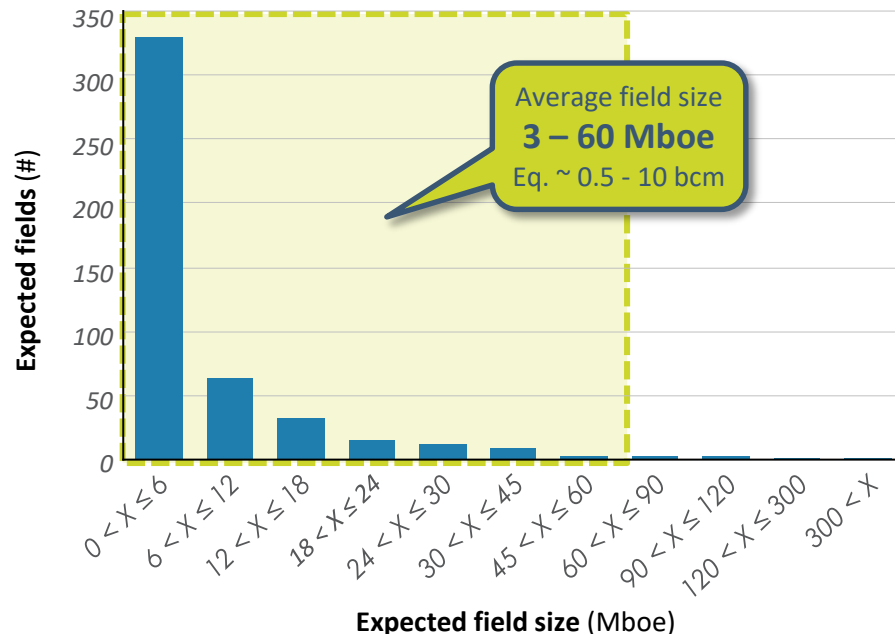
MORE STUDIES TO COME

**1200 – 1800  
Mboe**  
Eq. ~ 300 bcm

Preliminary inventory after EBN studies in the largest underexplored area:

- **Chalk:**  
>55 untested closures sizes varying between **10 and 300Mboe**
- **Triassic:**  
>50 closures, 29 leads, **500Mboe** unrisks
- **Zechstein:**  
7 leads
- **Carboniferous:**  
20 leads/structures, **450Mboe** unrisks

### Distribution of field sizes (Mboe)



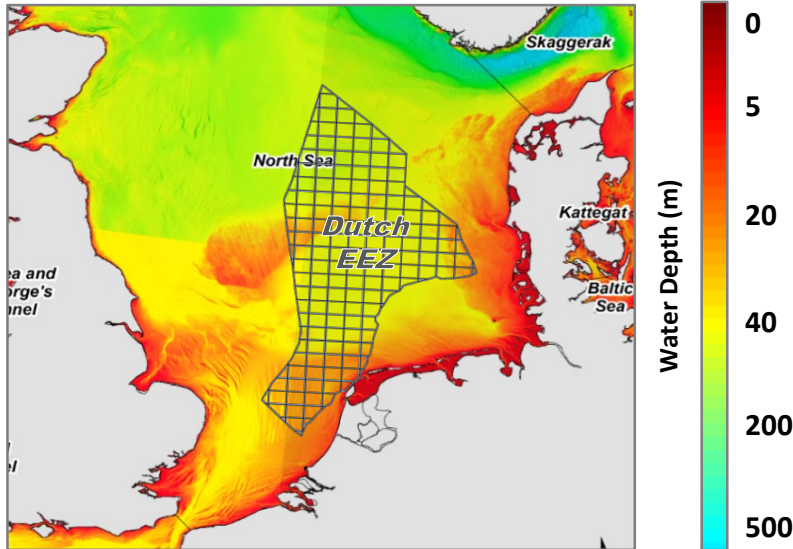
# Businesscase for Dutch exploration



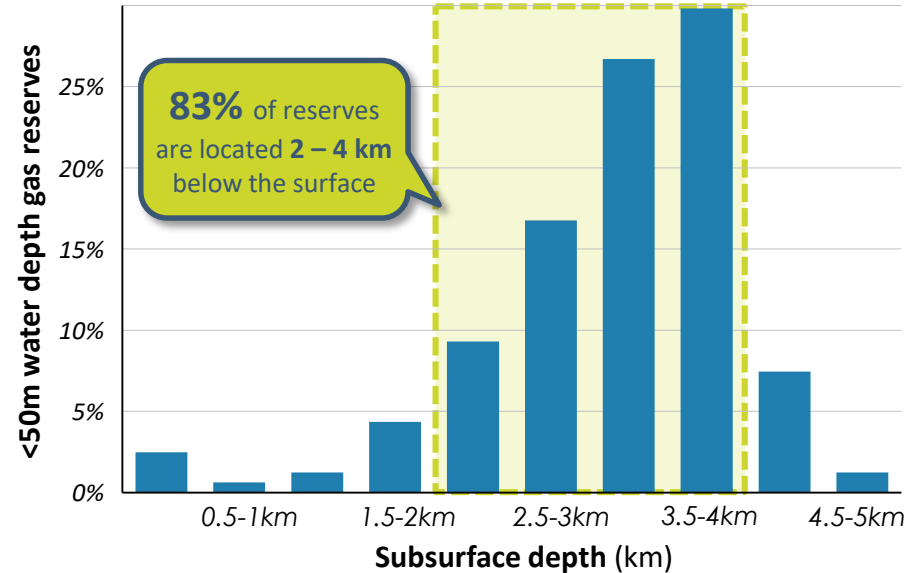


# Businesscase for Dutch Exploration

## Bathymetry of the Southern North Sea



## Subsurface depth of Dutch offshore gas reserves

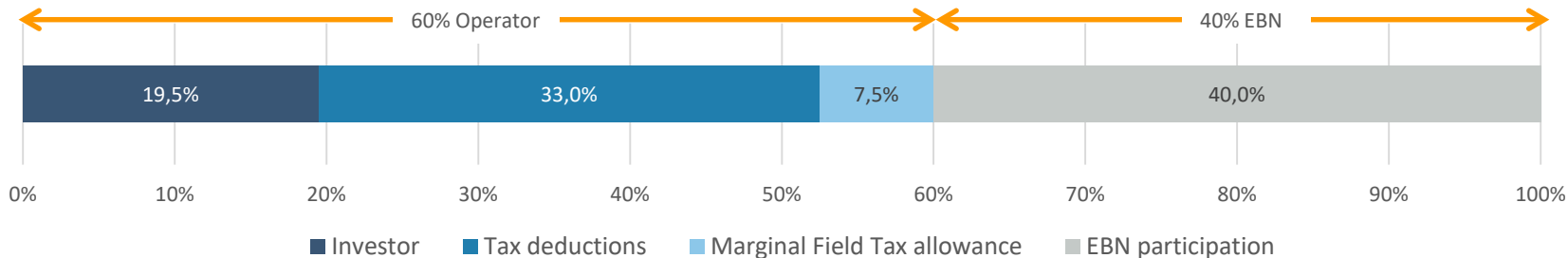


# Businesscase for Dutch Exploration

## Favourable investment climate

- EBN will invest **40%**
- For tax reduction purposes costs are subject to a **10% uplift**
- Marginal Field Allowance: **25% gross tax deduction**

➔ Deduction scheme reduces operator investment to **32.5%** of the operator share, **meaning 19.5%** of total investment

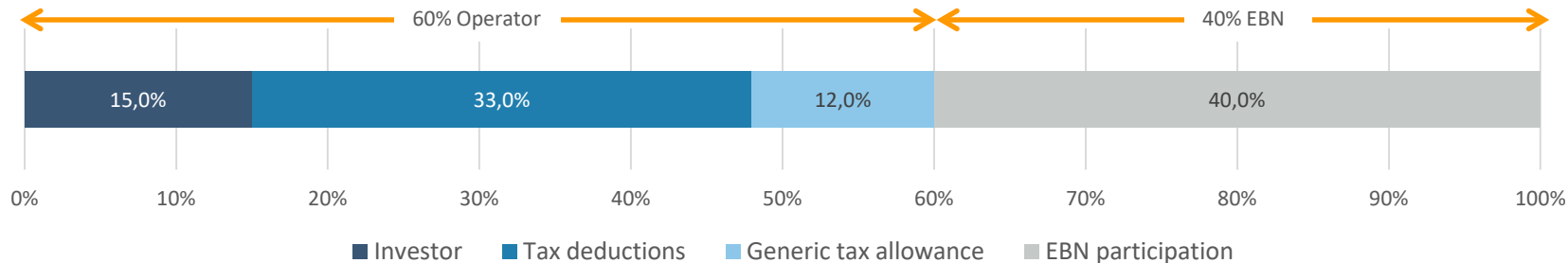
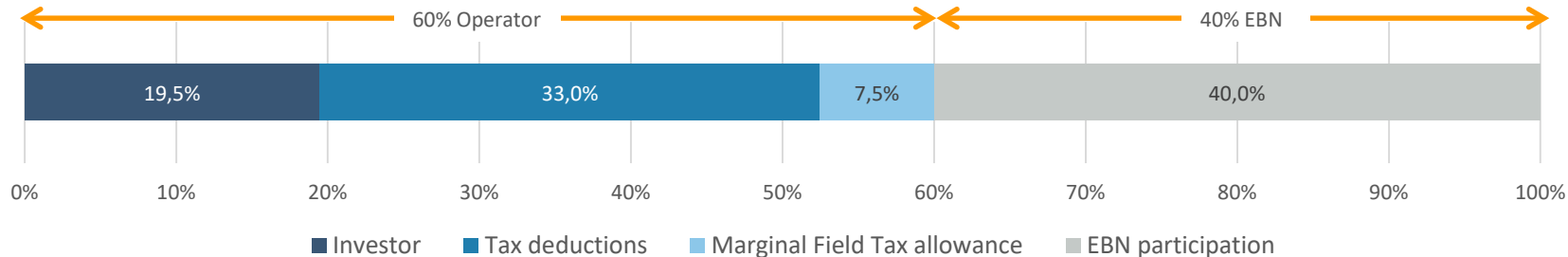


- **Guaranteed offtake** of gas by GasTerra B.V.

# Businesscase for Dutch Exploration

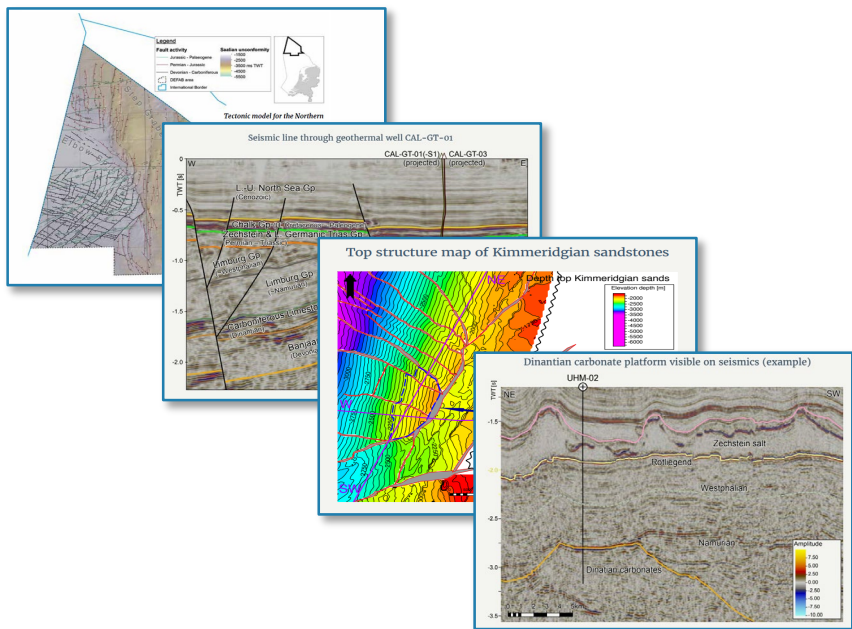
## Favourable investment climate

- Generic tax allowance: **40% gross tax deduction**



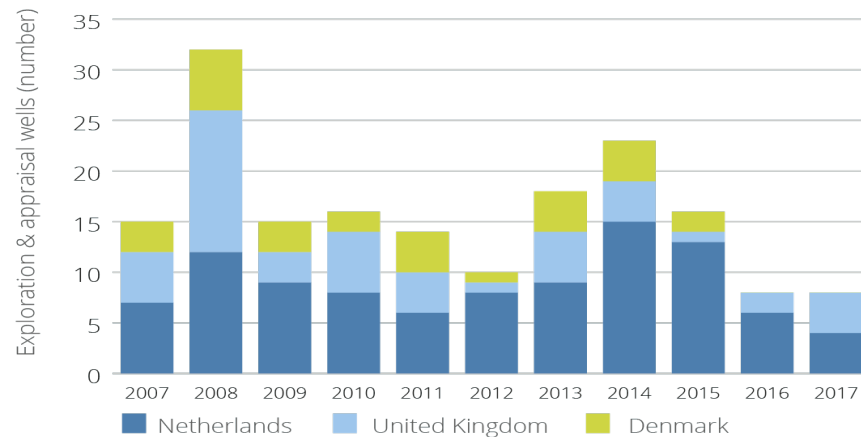
# Businesscase for Dutch Exploration

## Examples of high quality data sharing



## Intensity of SNS exploration: The Dutch success rate is high

Exploration & appraisal wells Southern North Sea 2007-2017



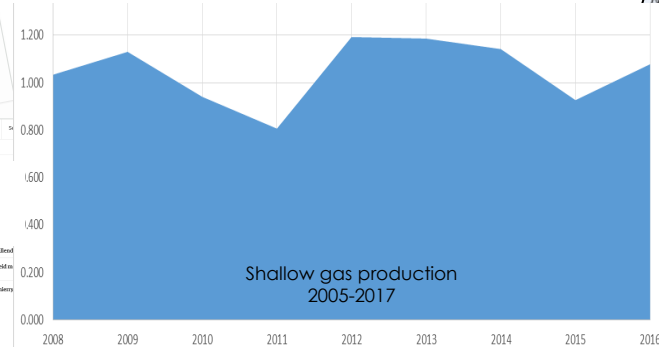
# Businesscase for Dutch Exploration

## Exploration success

Basal Rotliegend sands

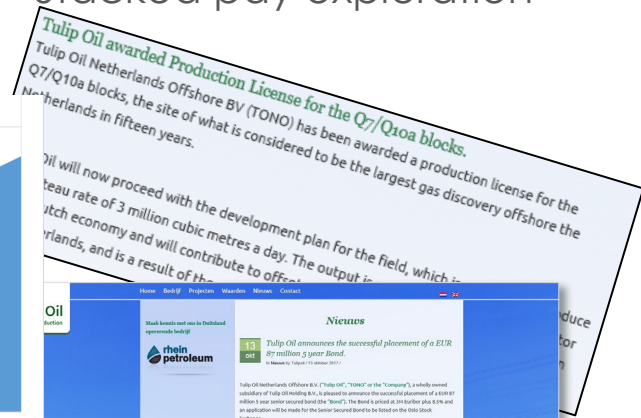
Shallow gas

Stacked pay exploration



Hansa, ONE open Rotliegend gas play in the Dutch North Sea

09/26/2017



Tulip Oil announces start-up and commissioning of the Q10 offshore gas development

rhain petroleum

Nieuws

Tulip Oil announces the successful placement of a EUR 87 million 2 year Bond.

Tulip Oil Netherlands Offshore B.V. ("Tulip Oil", "TONO" or the "Company"), a wholly owned subsidiary of Tulip Oil Holding B.V., is pleased to announce the successful placement of a EUR 87 million 2 year senior secured bond ("Bond"). The Bond is priced at 98.50% and an application will be made for the senior secured bond to be listed on the Euronext stock exchange.

The net proceeds from the issuance will primarily be used for the development of the Q10a gas field which was discovered in 2011 and lies offshore the Netherlands in a shallow water environment. Tulip Oil was awarded a production license for the Q10a blocks on the 14th of July of this year by the Dutch Ministry of Economic Affairs.

Head of Sales, Chief Executive Officer (Tulip Oil)

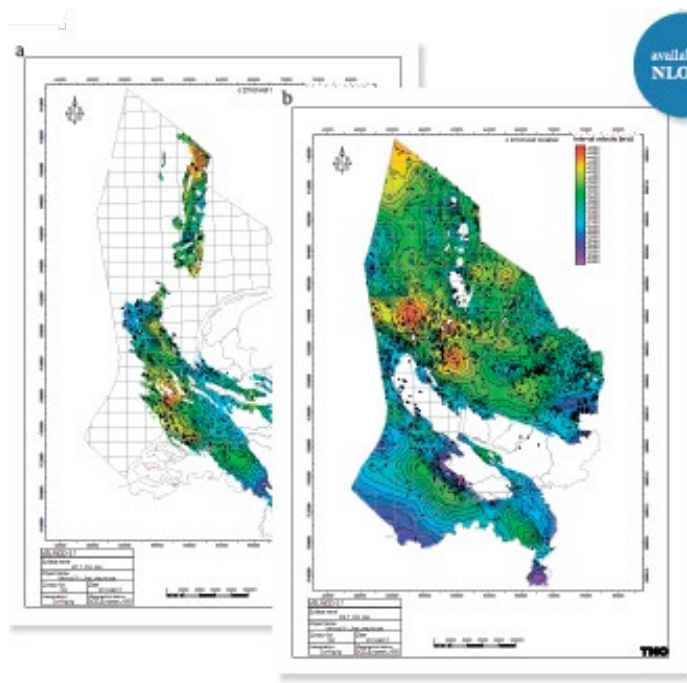
**Your gateway to  
Dutch data**





# Your gateway to Dutch data

Subsurface data available free of charge on **www.NLOG.nl** (TNO)



- Well data (>5 years)
- Seismic data (3D & 2D data >5 years)
- Production data
- Production plans
- Gas/oil fields and geothermal data
- Regional porosity & permeability maps
- Interpretations, reports
- Background references
- Legislation procedures

# Your gateway to Dutch data

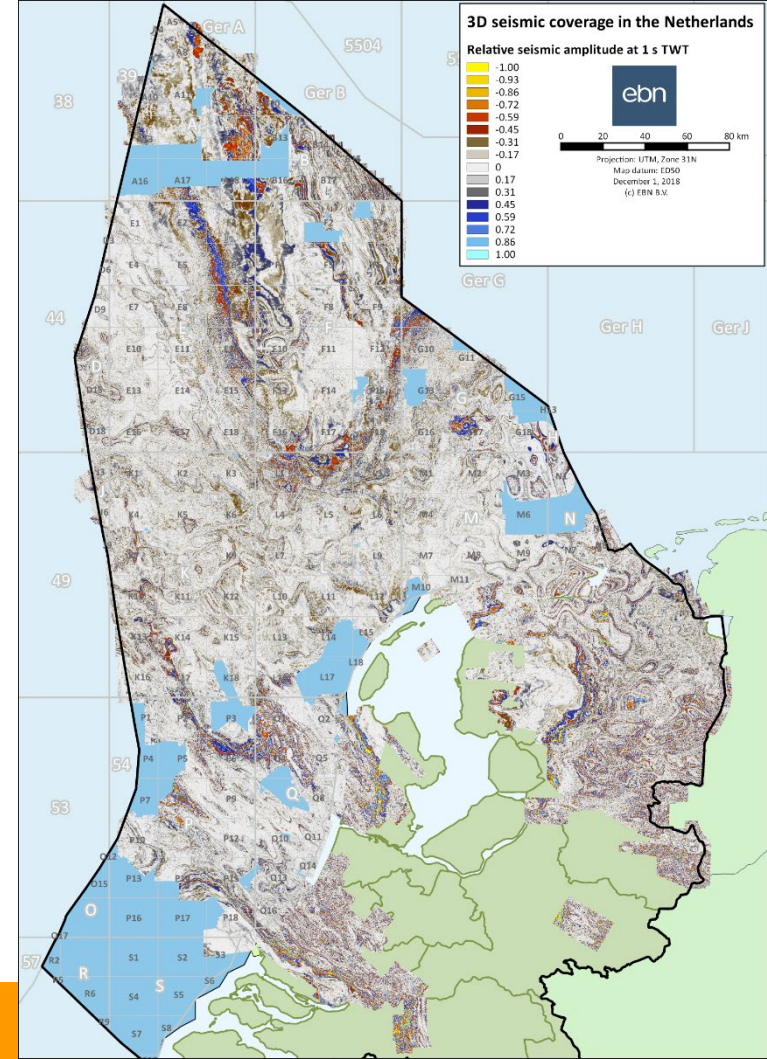
## 3D Seismic data

### ORTISI

#### Opportunity Realization Through Improved Seismic Imaging

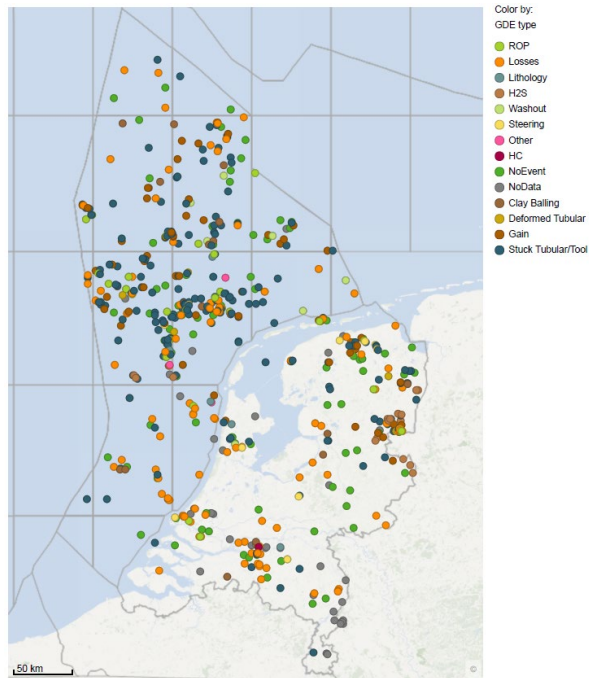
- Identification of risk areas on the basis of COP data and remaining prospectivity
- Improvement of seismic imaging through seismic reprocessing or seismic acquisition (if relevant)

Considers both **operated** and **open areas**.  
Results will be published via [www.ebn.nl](http://www.ebn.nl)



Data analyses by EBN

# Geo-Drilling Events database



This database provides information on drilling events from existing wells.

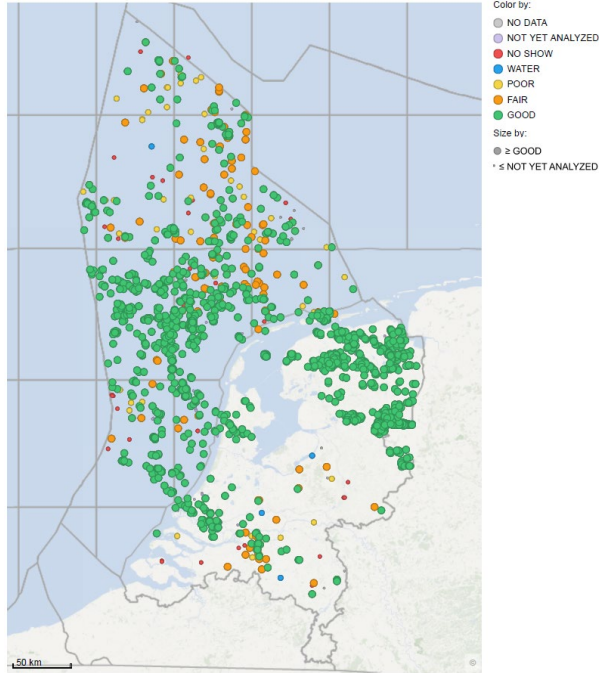
- A better understanding of geological drilling hazards in NL
- Improving well safety and reducing NPT & well costs

Available for operators active in the Netherlands  
[www.ebn.nl/en/exploration-production](http://www.ebn.nl/en/exploration-production)

**DEMO in Booth 43**

# Data analyses by EBN

## HC Show database



This database provides information on HC shows encountered during drilling from existing wells.

- Mudlog-, well test- and core data
- Usefull for exploration purposes and to assist in well planning

Expected in May-June 2019

**DEMO in Booth 43**

# Key take-aways: Why explore the Netherlands?



The Dutch North sea has several **underexplored areas**



Remaining offshore potential estimated at **1200 – 1800 Mboe** – eq. *~300 bcm*



EBN performs geological and geophysical studies, **locating new resources**



Subsurface **data available** free of charge on **[www.NLOG.nl](http://www.NLOG.nl)** and via **[www.ebn.nl](http://www.ebn.nl)**

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Subsurface **data available** free of charge on **www.NLOG.nl** and via **www.ebn.nl**



Efficient and extensive **infrastructure** in place and a **guaranteed offtake** of gas by GasTerra B.V.



EBN **co-invests** in E&P, with a **40%** investment stake which reduces financial exposure and risk



**Favourable** investment climate

- Good market & tax conditions
- Stable and internationally oriented investment climate
- Marginal Field Allowance: 25% gross tax deduction (Generic Tax Allowance ↑40% (exp. 2019))



# The Netherlands

- Energising the transition -

## Booth 43

For posters, presentations  
and brochures

Thank you for your attention

[exploration@ebn.nl](mailto:exploration@ebn.nl)

[www.ebn.nl/en/exploration-production](http://www.ebn.nl/en/exploration-production)



Courtesy of TAQA Netherlands, P15 platform