



# Hydraulic stimulation

## in the Netherlands – 50 years of experience

### Overview

#### **Experience**

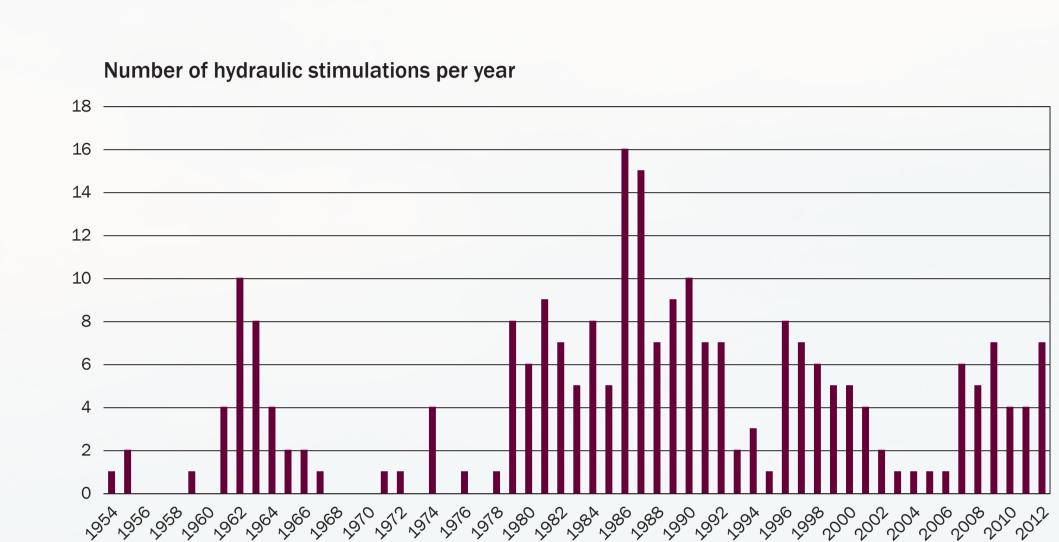
295 hydraulic stimulation jobs in 246 wells

**Target** 

Tight reservoirs; often in Rotliegend and Triassic Sst

Upside

Relative small number of hydraulic stimulation jobs compared to potential incremental producible volumes

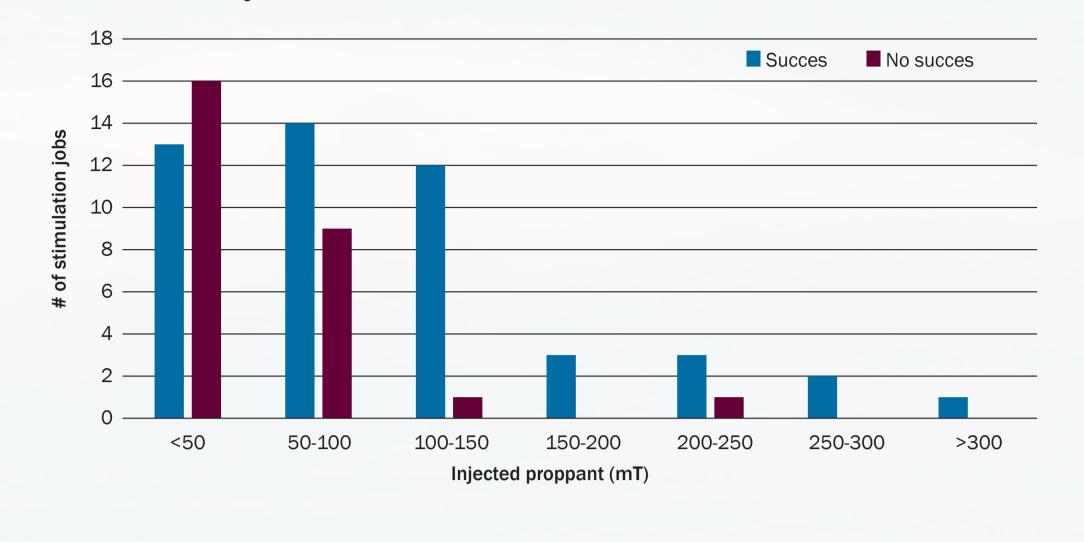


#### Statistical analysis

On hydraulic stimulations performed in the Netherlands since 1996

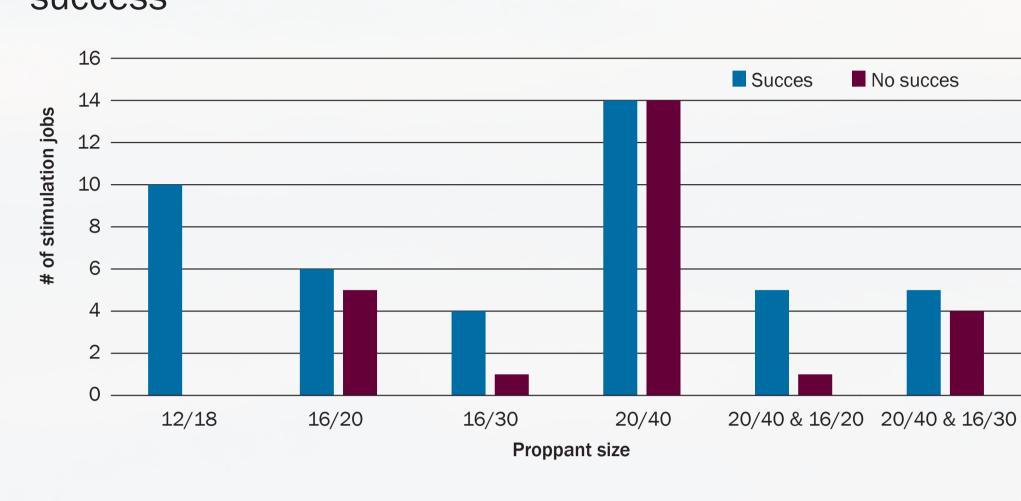
#### **Result 1**

Injected proppant volume larger than 90 metric tons are almost always a success



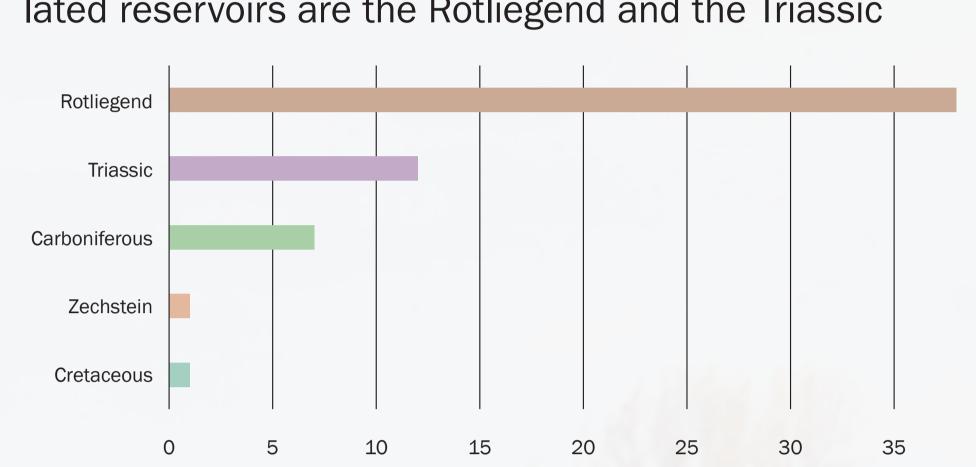
#### Result 2

All 10 stimulation jobs with a 12/18 mesh proppant are a success



#### Result 3

The formations with the majority of the hydraulically stimulated reservoirs are the Rotliegend and the Triassic



Number of stimulations per formation

## **Opportunities**

#### Typical ultimate recovery in conventional reservoirs

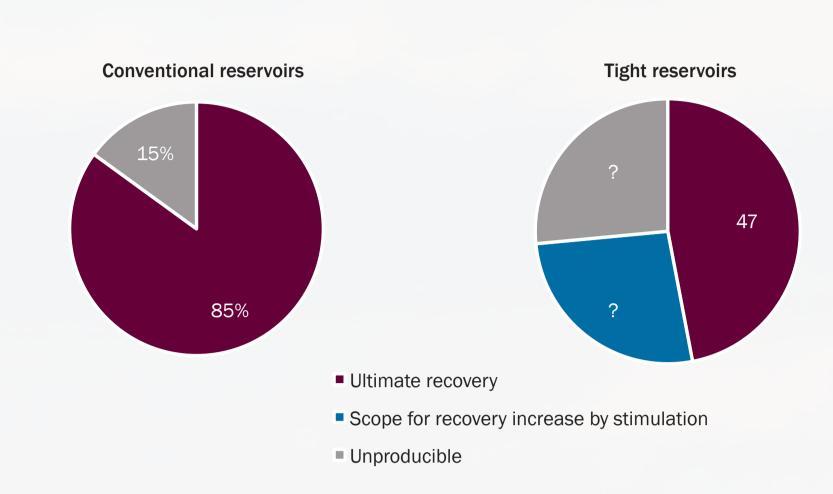
The current average ultimate recovery in Rotliegend and Triassic gas reservoirs in the Netherlands is 85%

#### **Identified tight gas volumes**

In the Dutch tight reservoir portfolio 470 bcm of static GIIP volumes are identified with an estimated ultimate recovery of 47%

#### Prize

Increasing the ultimate recovery in the Dutch tight reservoirs with a few percentages by means of hydraulic stimulation can lead to an incremental gas production of a part of the 250 bcm currently unconnected volumes





Hydraulic stimulation operation, Friesland area, the Netherlands, 2012



For all information and data on Exploration and Production in the Netherlands, see the Netherlands Oil and Gas Portal

www.nlog.nl & www.ebn.nl

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