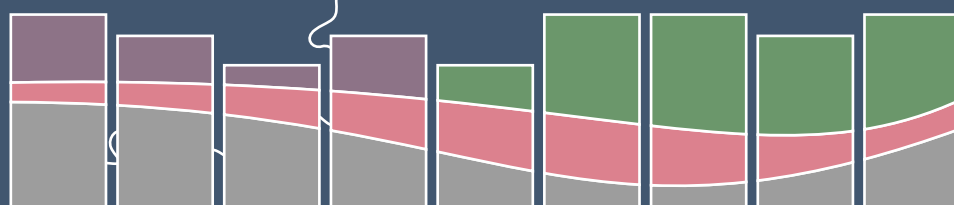




## Pre-publication Chapter 6



## Natural resources and geothermal energy in the Netherlands

## 6. Salt

On 1 January 2021 sixteen production and no exploration licences were in force. In 2020 no new licence applications were submitted. However, one application for a production licence from a previous year is still pending (see Figure 6.2). A complete list of all production licences is to be found in Annex M.

The licence areas for rock salt are all located in the north and east of the country because in this area salts from Zechstein and Triassic age are present in the underground.

In 2020 eight salt production wells were drilled. One well was drilled by Frisia in the production licence Havenmond. Seven wells were drilled by Nouryon in the western part of the production area Ganzebos (production licence Twenthe-Rijn). See table below and Figure 6.2.

Salt production wells drilled in 2020

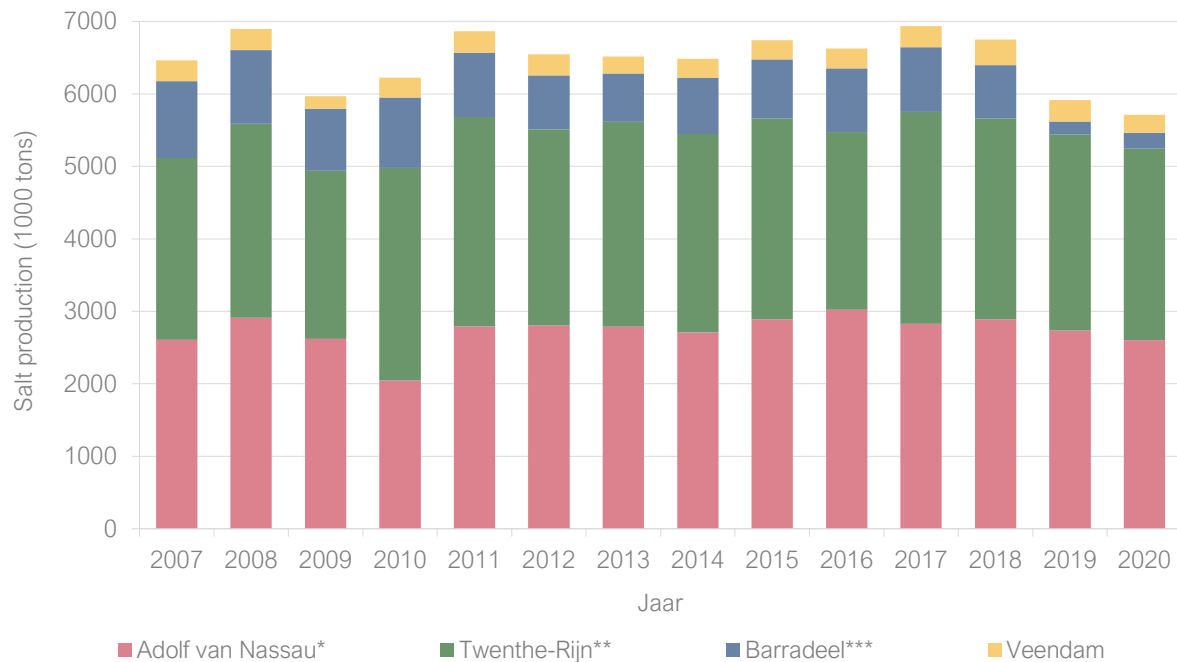
	Name of well	Licence	Operator	Function
1	Havenmond-02	Havenmond	Frisia Zout B.V.	Production
2	Twente-Rijn-548	Twenthe-Rijn	Nouryon Salt B.V.	Production
3	Twente-Rijn-552	Twenthe-Rijn	Nouryon Salt B.V.	Production
4	Twente-Rijn-553	Twenthe-Rijn	Nouryon Salt B.V.	Production
5	Twente-Rijn-554	Twenthe-Rijn	Nouryon Salt B.V.	Production
6	Twente-Rijn-555	Twenthe-Rijn	Nouryon Salt B.V.	Production
7	Twente-Rijn-556	Twenthe-Rijn	Nouryon Salt B.V.	Production
8	Twente-Rijn-557	Twenthe-Rijn	Nouryon Salt B.V.	Production

The table below shows the production data of salt per licence during 2020. Monthly production during 2020 varied between 391 and 544 thousand tons. Rock salt (also called halite) is produced from almost all salt production licences, only from the Veendam production licence another type of salt is extracted, namely magnesium salt.

Salt production in 2020 (in 1000 ton)

Licence	Operator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Adolf van Nassau III	Nouryon	118	105	112	102	99	101	76	56	45	48	65	103	1,028
Barradeel	Frisia	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.0	0.0	1.5
Barradeel II	Frisia	15	14	9	8	5	3	8	18	8	23	24	21	156
Havenmond	Frisia	-	-	-	-	-	-	-	-	8	11	17	29	65
Twenthe-Rijn	Nouryon	158	156	168	152	149	149	161	139	123	135	140	157	1,787
Tw-Rijn Helmerzijde	Nouryon	20	18	17	10	14	17	18	14	8	11	11	12	168
Tw-Rijn Oude Maten	Nouryon	20	15	18	18	23	17	0	0	0	12	3	11	137
Uitbreiding AvN III	Nouryon	150	134	129	124	132	136	139	121	140	117	120	130	1,572
Uitbreiding Tw-Rijn	Nouryon	41	35	43	33	45	45	48	46	41	58	62	54	551
Veendam	Nedmag	23	21	22	21	21	20	21	20	19	20	20	20	246
Total		544	498	518	467	487	486	470	413	391	434	460	533	5,701

Figure 6.1 shows the production of rock salt from 2007 to 2020. During this period, the salt production is constant, on average between 6 and 7 million tons per year. Just like in 2019 total salt production in 2020 is slightly below 6 million tons. This is mainly because production from the Barradeel production licences has decreased compared to previous years. Frisia finished drilling the first well for the production licence Havenmond in 2020 and started with production in September.



Figuur 6.1 Salt production 2007 – 2020, the production data is based on information supplied by the operators.

\* Including Adolf van Nassau III.

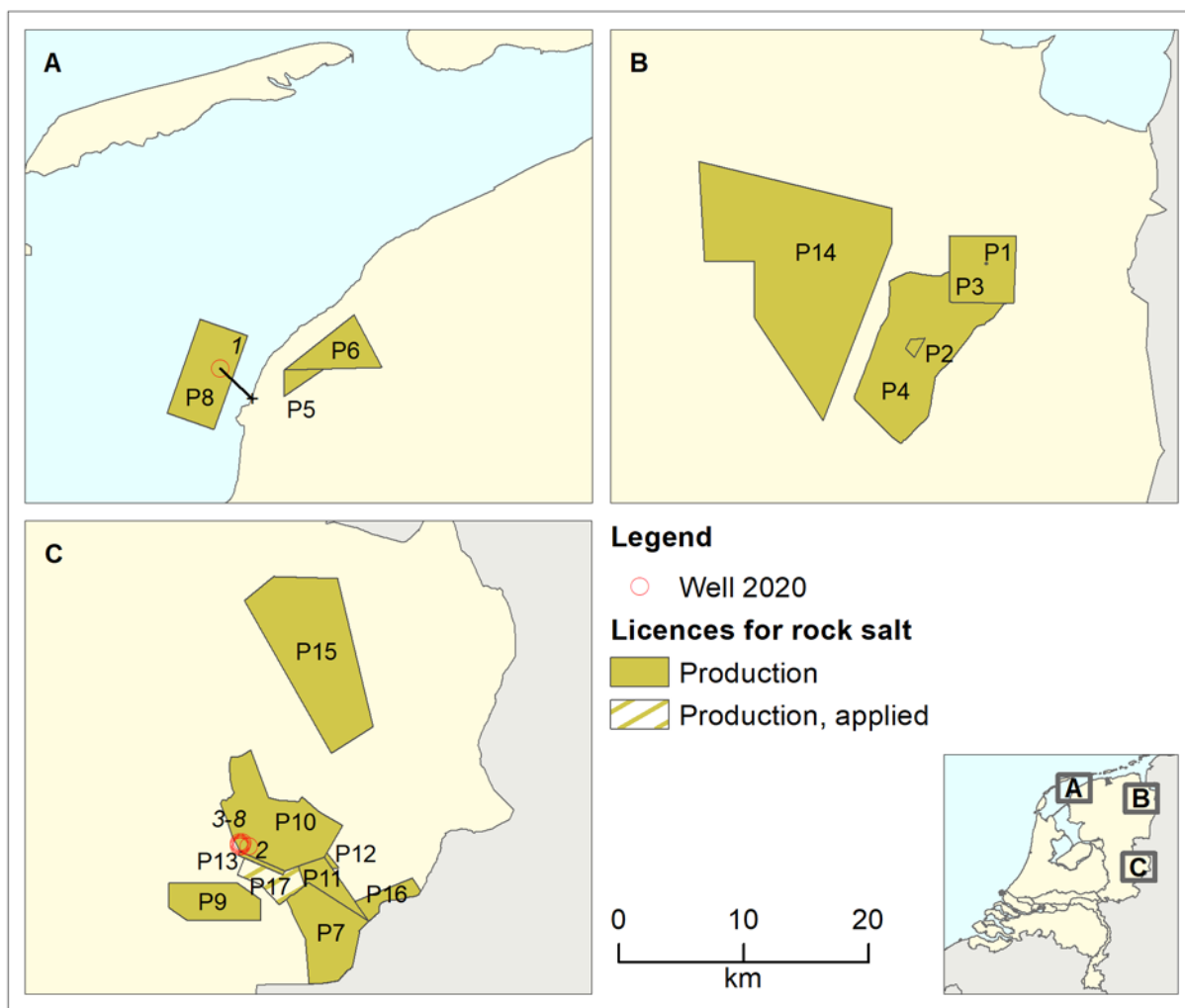
\*\* Including Uitbreiding Twenthe-Rijn, Twenthe-Rijn Helmerzijde en Twenthe-Rijn Oude Maten.

\*\*\* Including Uitbreiding Barradeel II and Havenmond.

### Storage caverns 'Aardgasbuffer Zuidwending'

Since 2007 Nouryon (former Akzo Nobel) leaches storage caverns in the municipality of Veendam for the "Aardgasbuffer Zuidwending".

The production from the storage caverns belong to the production licence 'Uitbreiding Adolf van Nassau II'. Only brine production data has been reported. In the period from 2007 to 2020 a total of approximately 39 million m<sup>3</sup> brine has been produced from these caverns. After development by Nouryon the caverns are handed over to the storage licence Zuidwending owned by EnergyStock. For more information about storage see Chapter 4.



Figuur 6.2 Licence for salt production as at 1 January 2021.

Names of salt production licences on the Netherlands territory, as indicated on the map in Figure 6.2.

Production licence for salt			
P1	Adolf van Nassau II	P9	Isidorushoeve
P2	Uitbreiding Adolf van Nassau II	P10	Twenthe-Rijn
P3	Adolf van Nassau III	P11	Uitbreiding Twenthe-Rijn
P4	Uitbreiding Adolf van Nassau III	P12	Twenthe-Rijn Helmerzijde
P5	Barradeel	P13	Twenthe-Rijn Oude Maten
P6	Barradeel II	P14	Veendam
P7	Buurse	P15	Weerselo
P8	Havenmond	P16	Zuidoost-Enschede
Applied production licence for salt			
P17	Twenthe-Rijn Welen Mos		



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