Ministry of Economic Affairs

Ministry of Economic Affairs
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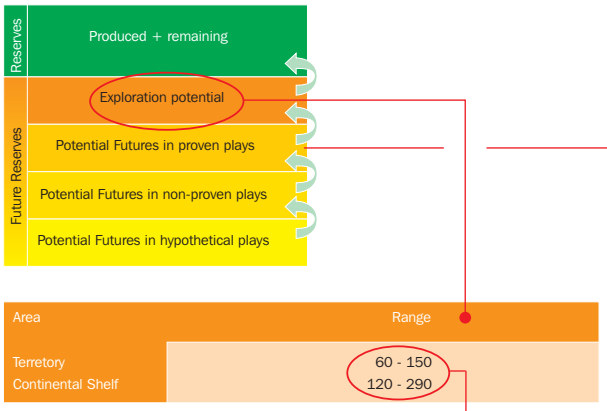
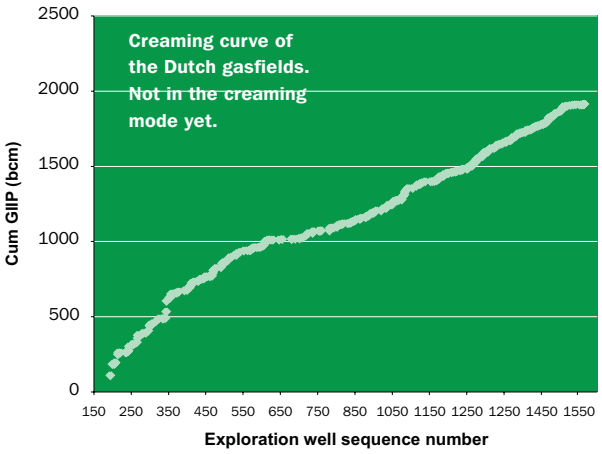
Prospectivity in the Netherlands

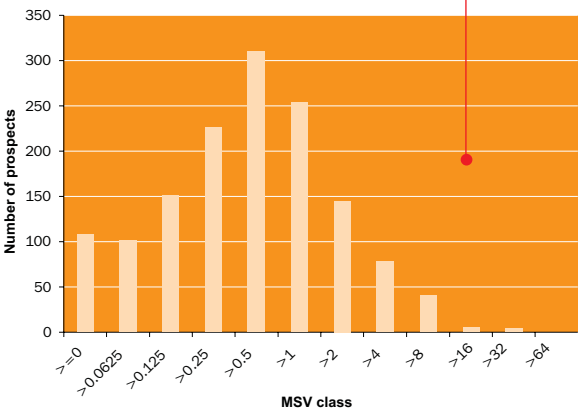
Undiscovered resources: exploration potential

The exploration potential is the producible volume that may be assumed to be present in as yet undiscovered accumulations in the subsurface of the Netherlands on the basis of geological information. Economic factors are not taken into account in this estimate. In estimating the exploration potential for natural gas, TNO focuses on evaluating those geological units (so-called plays), in which geological conditions are favourable for gas accumulations and which have been sufficiently proven by drilling. Within these geological plays, only those prospective structures ('prospects') are considered that have been identified and assessed on the basis of existing data. Prospects of which the volume is very small – in case of success smaller than 0.5 billion Sm^3 onshore or smaller than 2 billion Sm^3 offshore – are not included in the potential estimate. The exploration potential that may be present in hypothetical plays, or in not actually identified geological structures, is not taken into account because of its speculative nature. The estimate of the exploration potential includes prospects located in environmentally sensitive areas. The estimate of the exploration potential is expressed as a numerical range, to stress the inherent highly uncertain nature.

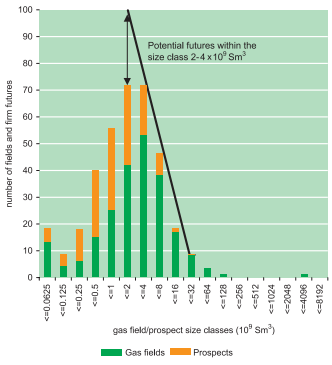


Exploration potential for natural gas (in billion Sm^3) as per Januari 1, 2006





Prospect size distribution of the exploration potential portfolio



Fractal analysis of fields and firm futures of the Rotliegend play

Upper Boundary size class (10^9 Sm^3)	predicted total volume	number successes to be explored *	number of structures left to be explored **	expectation volume of potential futures ***
<=0.0625	213.75	196	723	6.11
<=0.125	191	183	696	11.41
<=0.25	168.25	150	536	28.21
<=0.5	145.5	105	383	39.55
<=1	122.75	67	249	50.42
<=2	100	28	104	42.63
<=4	77.25	6	20	16.62
<=8	54.5	8	29	49.74
<=16	31.75	13	51	161.28
<=32	9	1	2	15.84

The number of prospects per size class deduced from the fractal analysis

Exploration potential under economic constraints

Evaluating the prospect portfolio with for example the TNO exploration simulation program EXPLOSIM (Lutgert et al. 2005) will result in a risked, economic volume gas to be found.

	Prospect Portfolio	Output Exploration simulation runs with different economic scenario's		
	Prospect portfolio @ zero cut-off	***Exploration potential*** = Prospect portfolio @ MSV cut-off (offshore 2bcm; onshore 0.5bcm)	Prospect portfolio @ EMV>0 cut-off, oilprice 35$	Prospect portfolio @ EMV>0 cut-off, oilprice 50$
Expectation (Risked Volume in bcm)	500	335	220	332
Number of prospects	1420	450	140	215

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