

Transmission on Balance 2002



Technical operation: facts en figures

In this brochure tennet has drawn up the balance in respect of its main technical operating results for 2002. In addition to listing data on tennet's infrastructural operating assets, the brochure also elaborates on their deployment for the benefit of facilitating the power market.

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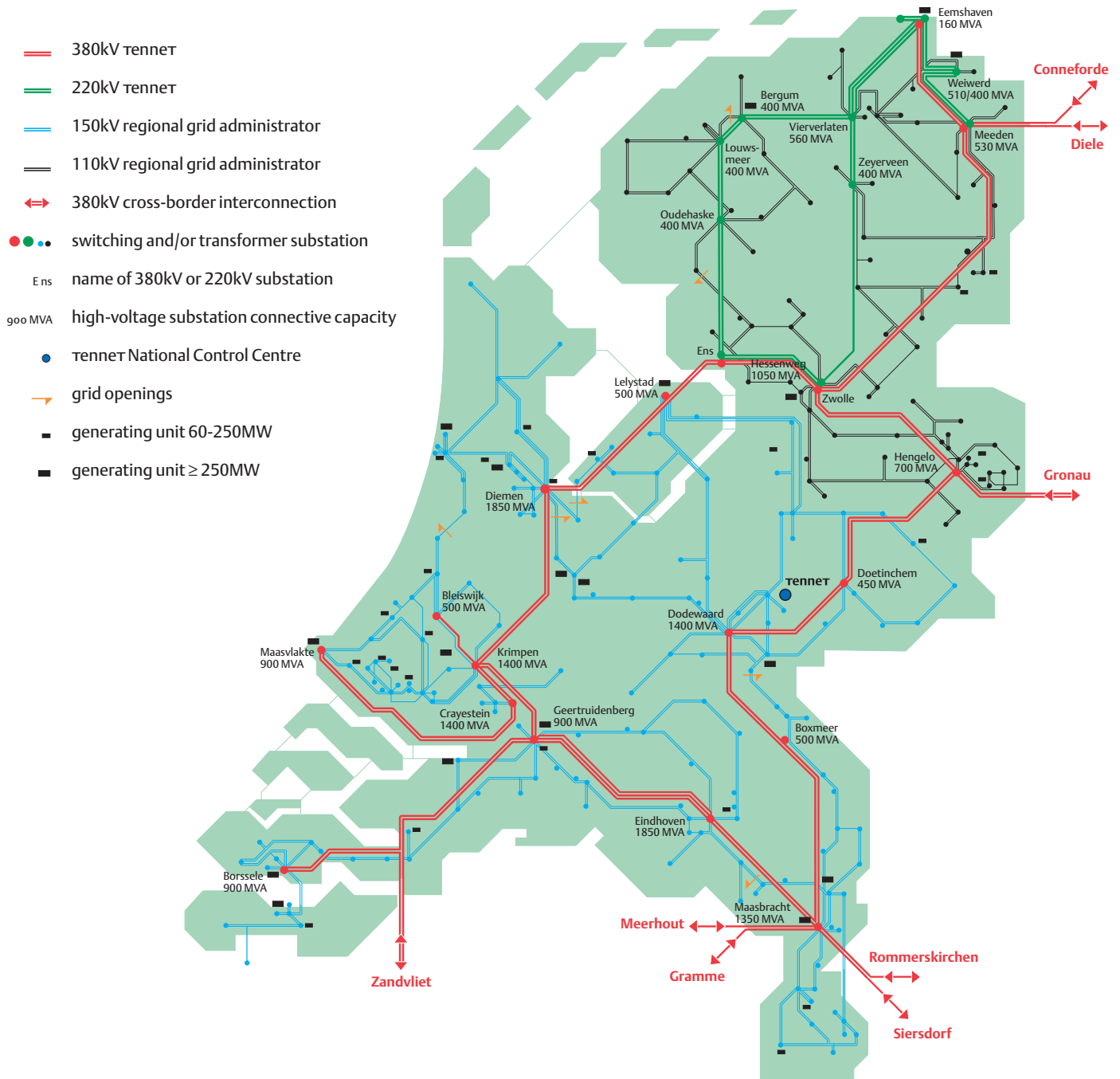


Transmission System Operator

Dutch High Voltage Grid

1 January 2003

The overview of the Dutch high-voltage grid shows the overhead high-voltage links, of which the main transmission grid, i.e. the 380kV/220kV section including the cross-border interconnections, is administered by tennet, as are the 24 380kV and 220kV switching and/or transformer substations whose connective capacity is also shown.



Connective capacity of generating units

The generating units' 380kV and 220kV connective capacity remained unchanged in 2002.

	1998	1999	2000	2001	2002	
380 kV	3 963	3 963	3 963	3 963	3 963	MVA
220 kV	3 076	3 076	3 076	3 076	3 076	MVA

Connective capacity of transformer units

Inclusive of bulk consumers

The connective capacity as at year-end 2002 has turned out the same as that one year earlier. Although the spare transformer in Maasbracht went live in 2002, given its back-up role it is not taken into consideration in determining the official connective capacity.

	1998	1999	2000	2001	2002	
380 kV	12 600	13 600	14 100	14 600	14 600	MVA
220 kV	4 580	4 580	4 540	4 810	4 810	MVA

Availability of 380kV and 220kV high-voltage grid

The availability on the connections during the first 49 weeks of 2002 totalled 99.7% for the connected grid companies, against 94.8% on the cross-border interconnections, with realisation being kept within tenner's availability standards in both categories. As for the category of cross-border interconnections, unavailability was dominated by maintenance work being carried out on the Meeden-Germany connection, where phase shifters are being installed, allowance having been made in the standard for the amount of time required to complete this project. Unavailability due to failure was kept within tenner's availability standard by a generous margin, with none of the failures causing supply to be interrupted.

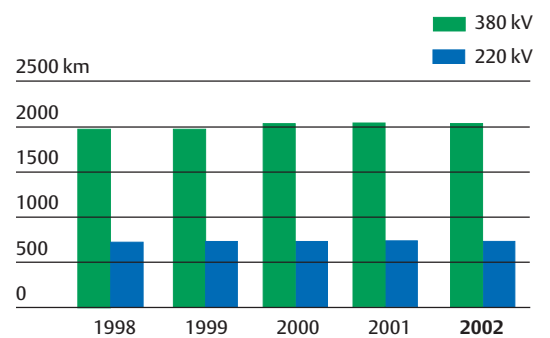
Non-availability of 380kV and 220kV grid

	Number of connections	Planned non-availability/ unplanned non-availability standard	Planned non-availability/ unplanned non-availability realised
Domestically	55	0,5 / 0,03 %	0,3 / 0,02%
Cross-border	10	5,8 / 0,03 %	5,2 / 0,01 %

% = Percentage of time during which not available for transmission

Circuit length

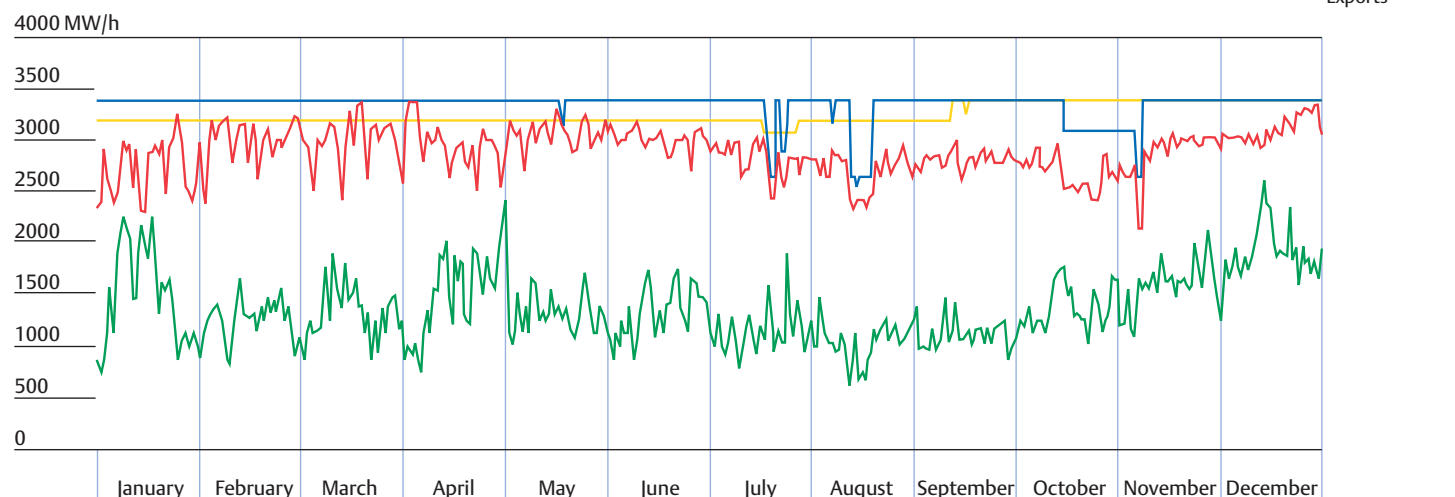
The 380kV and 220kV circuit lengths remained unchanged in 2002 at 2003 kilometres and 683 kilometres, respectively.



Cross-border exchange

maximum programme value per day in 2002

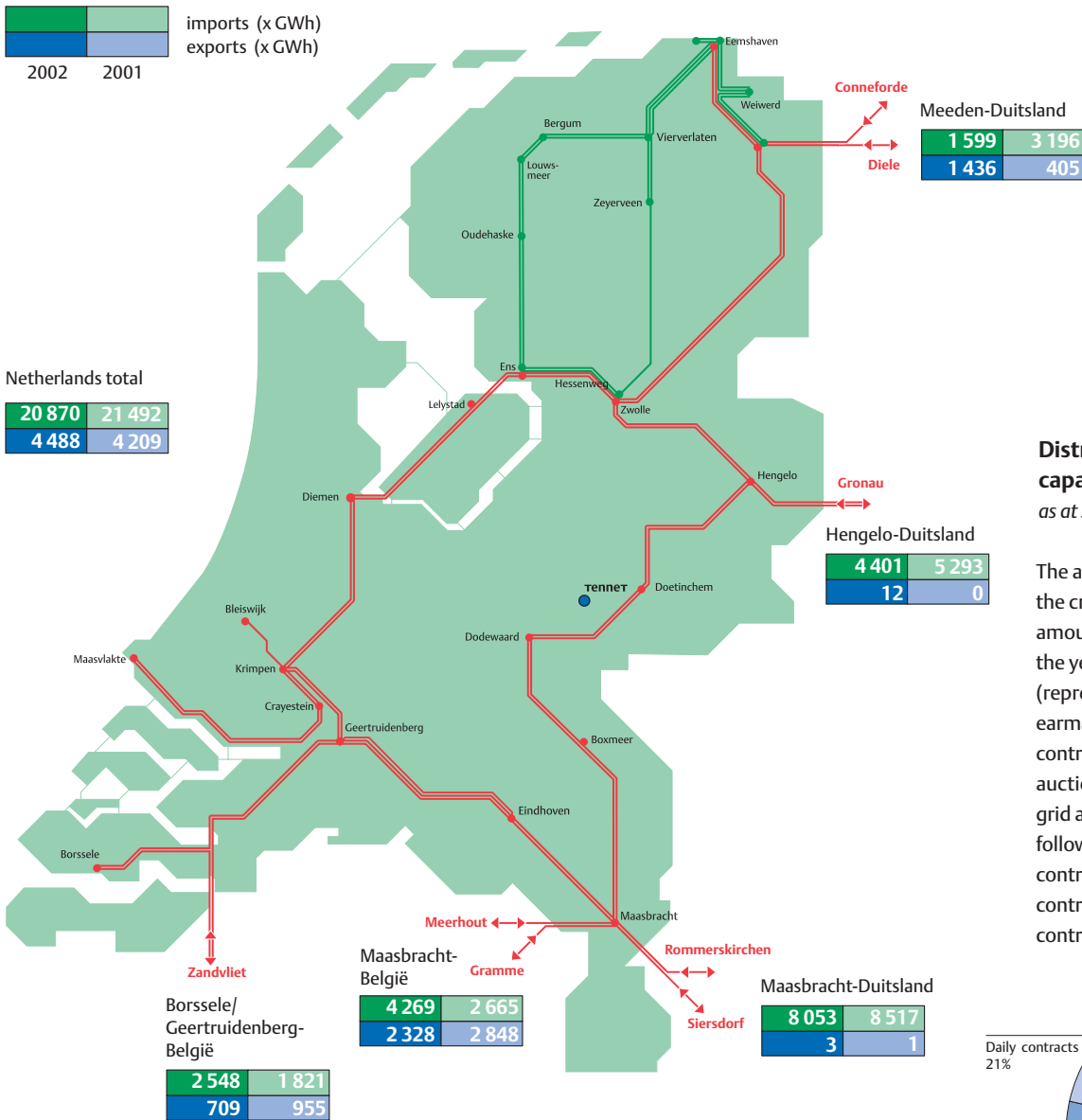
The graph shows the maximum capacity released and the maximum programme values of imports and exports on a daily basis



Imports and exports (including transit) measures per cross-border interconnection

total for 2002 (x GWh)

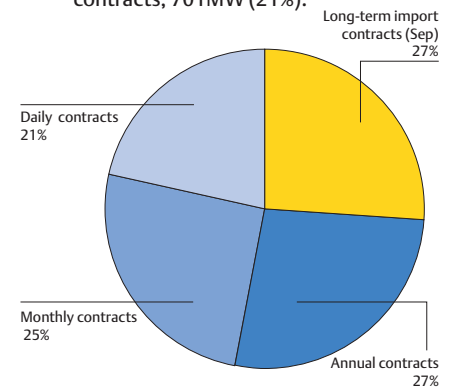
The chart shows the total imports and exports as measured for 2002 of the international transmission runs, both per individual cross-border interconnection and for the Netherlands as a whole, in terms of GWh.



Distribution of net import capacity for 2002

as at 31 December 2002

The aggregate net import capacity on the cross-border interconnections amounted to 3,350MW throughout the year, of which 900MW (representing 27%) had been earmarked for long-term import contracts, with the remainder being auctioned off by the relevant (national) grid administrators. Availability was as follows during the year: annual contracts, 900MW (27%); monthly contracts, 849MW (25%); and daily contracts, 701MW (21%).



Transmission runs, cross-border interconnections in 2002

x GWh

	Programmes			Cross-border interconnection measurements
	programmes	UCTE programme compensation	programmes total	
Imports 2002	22 974	16	22 990	20 870
Imports 2001	20 384	69	20 453	21 492
Exports 2002	6 514	94	6 608	4 488
Exports 2001	3 113	57	3 170	4 209

Involuntary exchange between the Netherlands and other countries

Hourly values, 2001/2002

The discrepancy relative to the exchange programme involving other countries turned out at nil (= balanced) for 30.3% of the time. By way of illustration, an involuntary exchange in the amount of minus 40MWh occurred for 14.0% of the time and an involuntary exchange in the amount of plus 40MWh, for 3.9% of the time.

PRP (Programme Responsible Party) imbalance per day

1 January to 10 December 2002 inclusive

The graph shows the total daily imbalance per day (as MWh) for all PRPs together, with the bars reflecting the volume per day, of the positive imbalance (surplus) and the negative imbalance (shortfall).

