

Offshore Grid Development Plan 2030, Version 2017, first draft



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Key changes to the O-GDP 2025



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- The target networks for scenarios A 2030, B 2030 and C 2030 do not differ in the O-GDP 2030 due to the initial values of the scenario framework and the unit size of the grid connection systems.
- For the first time, a DC network connection system with a transmission capacity of 900 MW is used in the Baltic Sea.
- The O-GDP also makes allowances for the new Offshore Wind Act, which came into effect on 01.01.2017.
- In accordance with the German Energy Management Act, there will be no further O-GDPs after the second draft of the O-GDP 2030.
- The transition from the O-GDP 2030, Version 2017 to “Flächenentwicklungsplan” in 2019 is described and depicted.

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Approved scenario framework by the German Federal Network Agency



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O-GDP 2025

Region	Scenario A 2025	Scenario B 1 and B 2 2025	Scenario B 1 and B 2 2035	Scenario C 2025
North Sea	7.7 GW	9.2 GW	16.6 GW	9.2 GW
Baltic Sea	1.2 GW	1.3 GW	1.9 GW	1.3 GW
Total	8.9 GW	10.5 GW	18.5 GW	10.5 GW

O-GDP 2030

Region	Scenario A 2030	Scenario B 2030	Scenario B 2035	Scenario C 2030
North Sea	11.2 GW	11.7 GW	14.4 GW	11.7 GW
Baltic Sea	3.1 GW	3.3 GW	4.6 GW	3.3 GW
Total	14.3 GW	15.0 GW	19.0 GW	15.0 GW

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The starting offshore grid in the North Sea by 2020

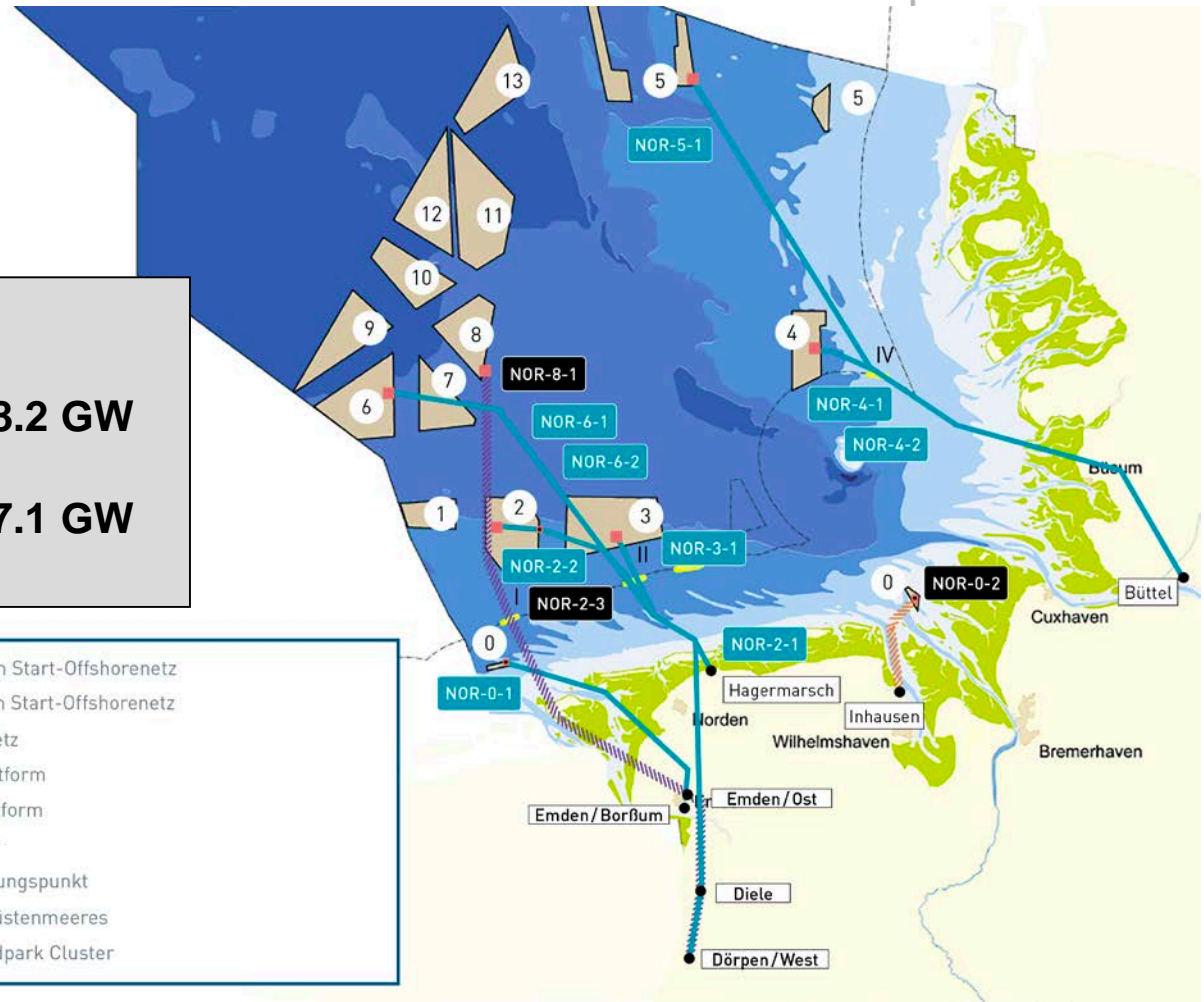


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Transmission capacity of the starting offshore grid **8.2 GW**

➤ **North Sea share** **7.1 GW**

- DC-Neubau im Start-Offshorenetz
- AC-Neubau im Start-Offshorenetz
- Ist-Offshorenetz
- Konverterplattform
- Umspannplattform
- Grenzkorridor
- Netzverknüpfungspunkt
- Grenze des Küstenmeeres
- Offshore-Windpark Cluster



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Offshore grid extension in Scenarios A 2030, B 2030 and C 2030 in the North Sea

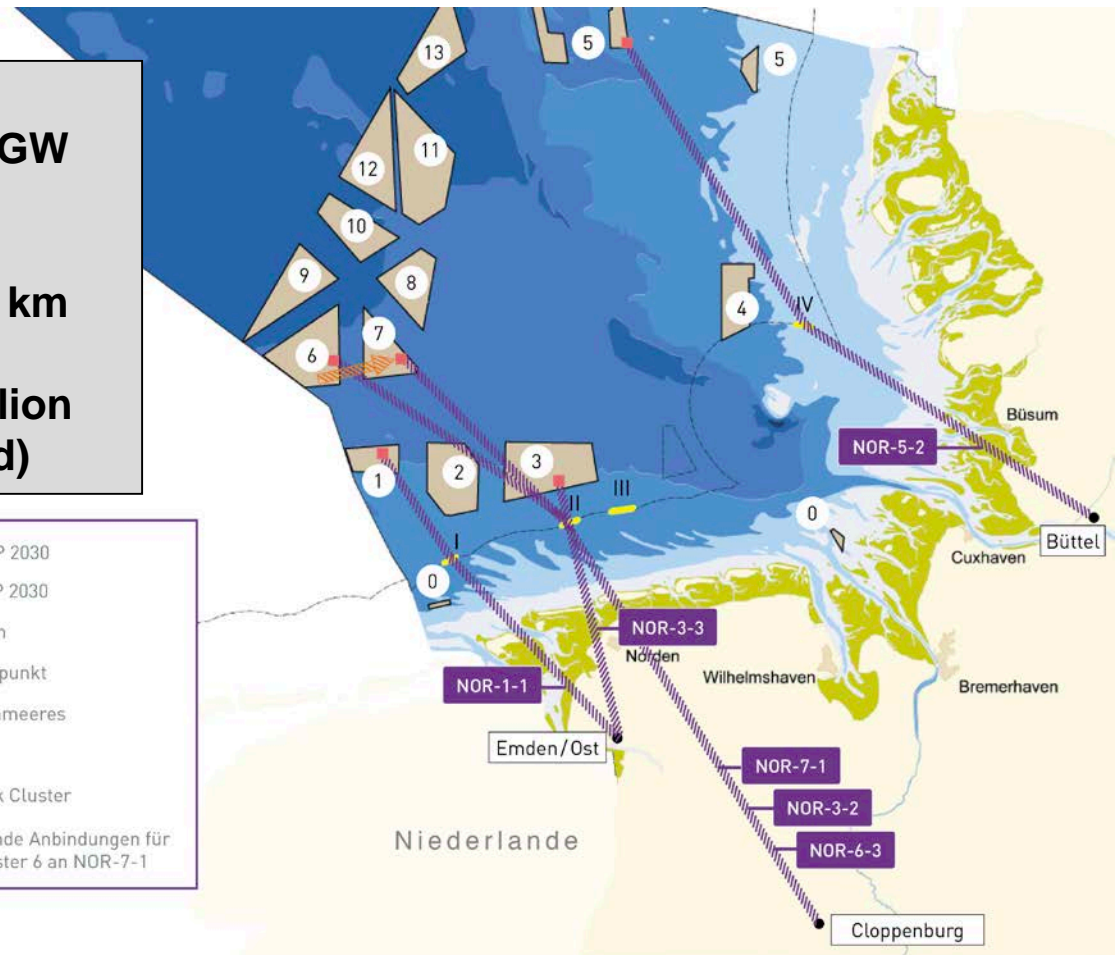


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**Total transmission capacity
of offshore grid extension** **5 GW**

**Total length of offshore
grid extension (North Sea)** **1,527 km**

**Estimated investment
(extension of North Sea offshore grid)** **€8 billion**



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Offshore grid extension in Scenarios A 2030, B 2030 and C 2030 in the North Sea



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Project	Name of the measure	Grid connection point	Start of implementation	Planned completion
NOR-3-3	HVDC connection line NOR-3-3 (DoIWin6)	Emden/Ost	2017 or 2018	2023
NOR-1-1	HVDC connection line NOR-1-1 (DoIWin5)	Emden/Ost	2019	2024
NOR-7-1	HVDC connection line NOR-7-1 (BorWin5)	Cloppenburg	2020	2025
NOR-5-2	HVDC connection line NOR-5-1 (SylWin2)	Büttel	2020	2025
NOR-3-2	HVDC connection line NOR-3-2 (DoIWin4)	Cloppenburg	2023	2028
NOR-6-3	HVDC connection line NOR-6-3 (BorWin4)	Cloppenburg	2025	2030

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Offshore grid extension in Scenario B 2035 in the North Sea

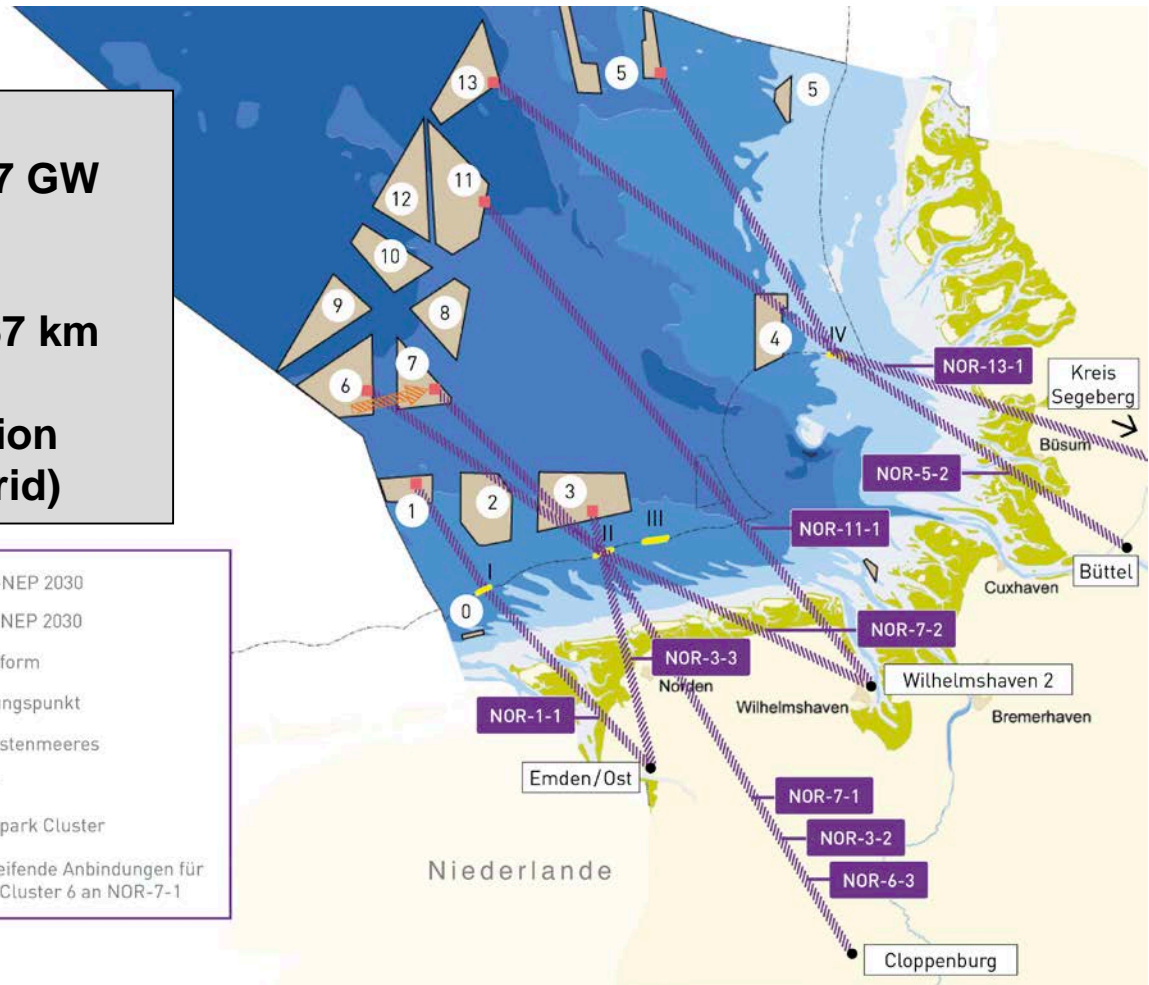


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Total transmission capacity
of offshore grid extension **7.7 GW**

Total length of offshore
grid extension (North Sea) **2,467 km**

Estimated investment **€12.5 billion**
(extension of North Sea offshore grid)

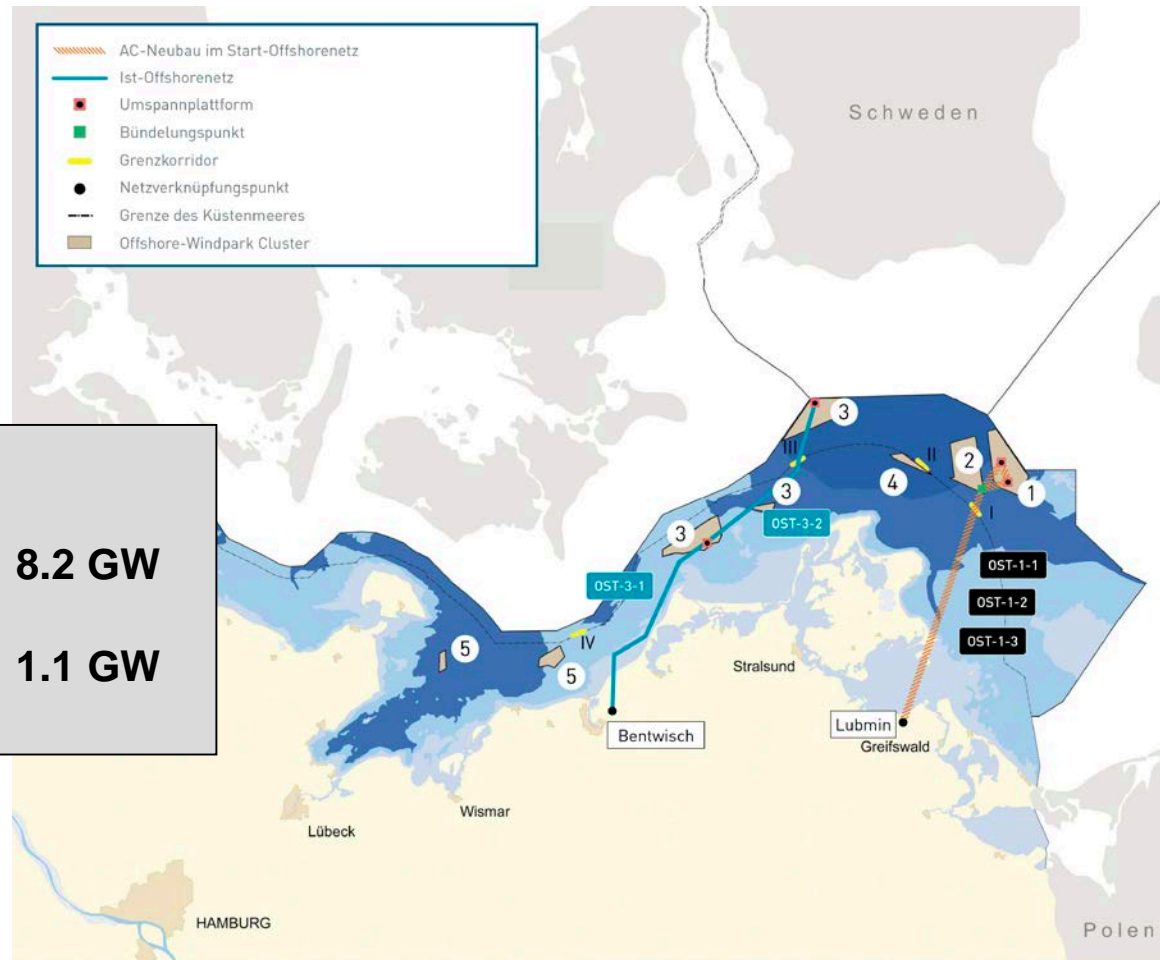


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The starting offshore grid in the Baltic Sea by 2020



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Transmission capacity of the starting offshore grid

8.2 GW

➤ Baltic Sea share

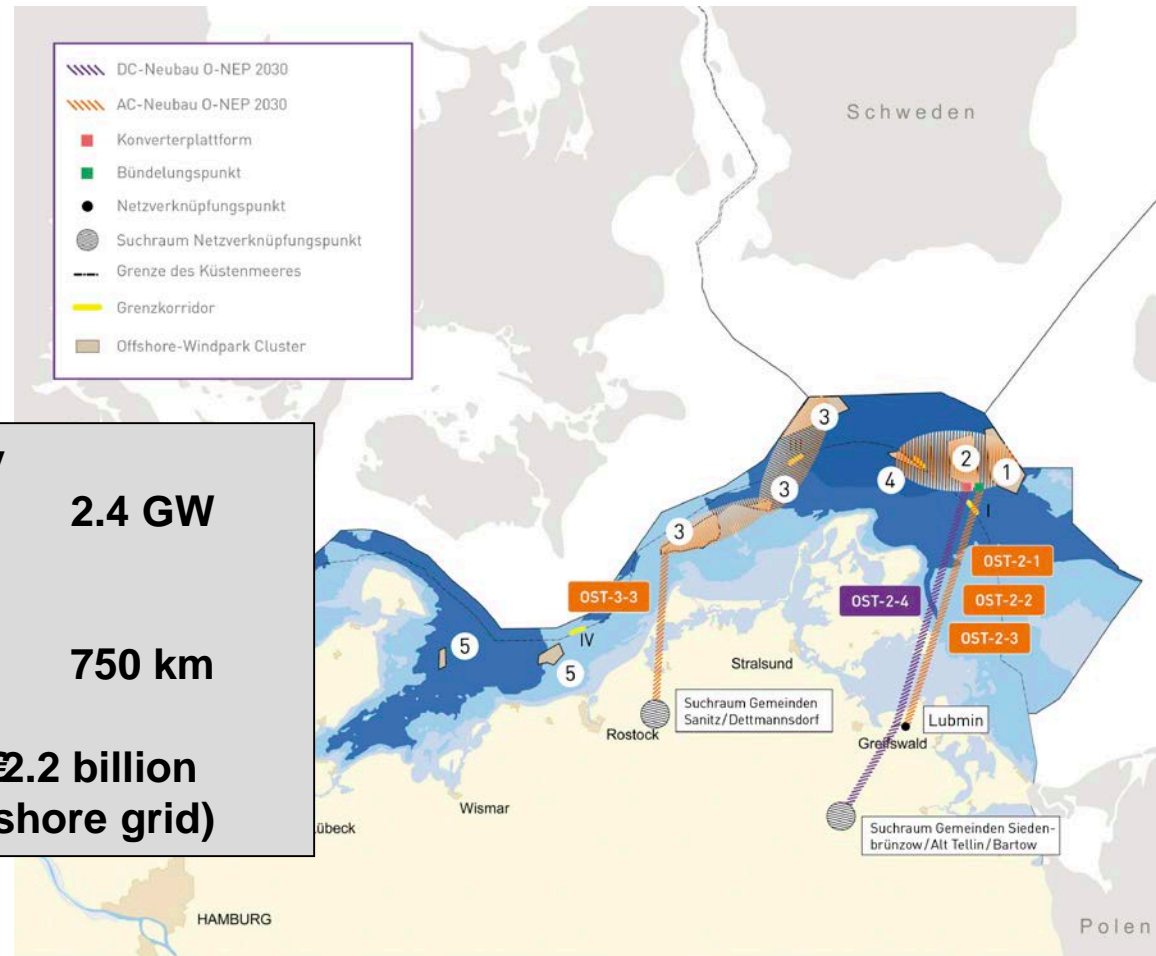
1.1 GW

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The offshore grid extension in Scenarios A 2030, B 2030 and C 2030 in the Baltic Sea



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Total transmission capacity of offshore grid extension	2.4 GW
Total length of offshore grid extension (Baltic Sea)	750 km
Estimated investment (extension of Baltic Sea offshore grid)	€2.2 billion

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Offshore grid extension in Scenarios A 2030, B 2030 and C 2030 in the Baltic Sea



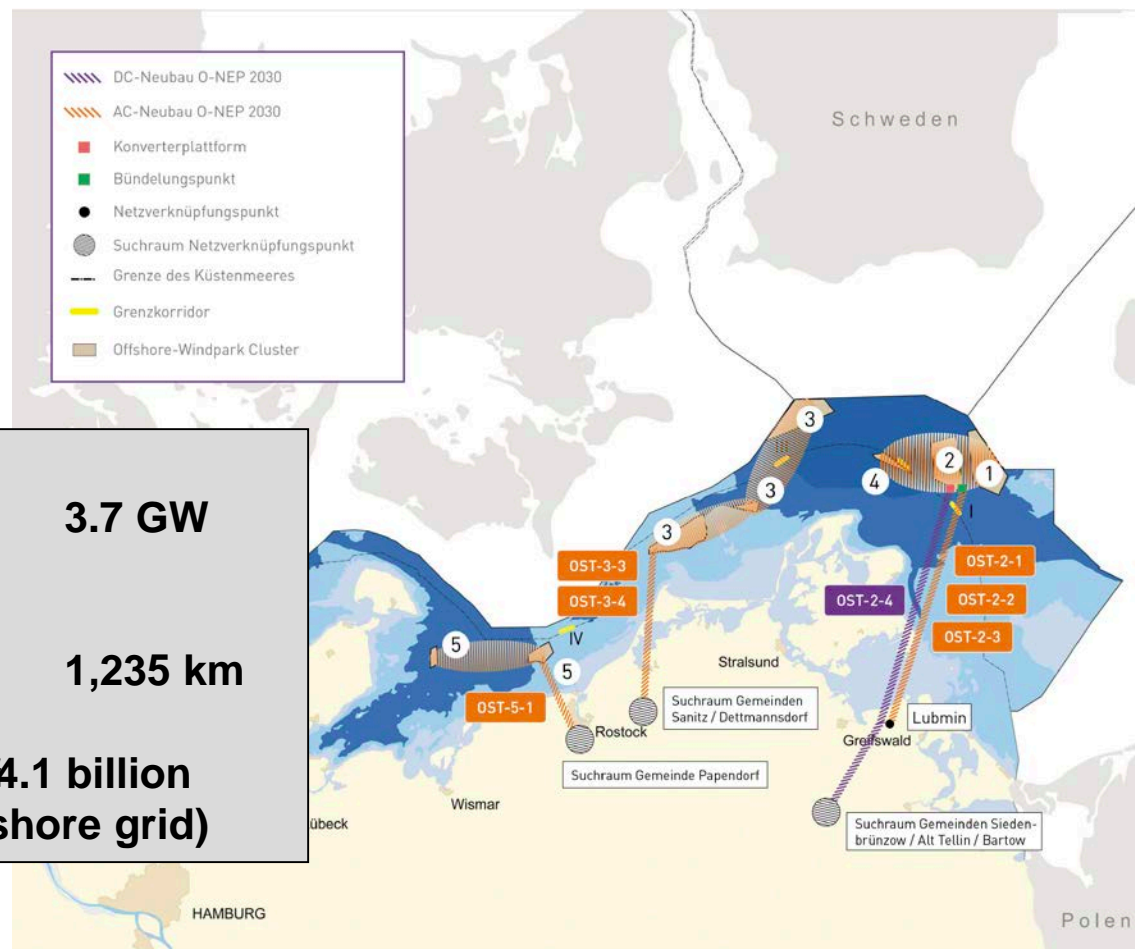
Project	Name of the measure	Grid connection point	Start of implementation	Planned completion
OST-2-1	AC connection line OST-2-1	Lubmin	2018	2021
OST-2-2	AC connection line OST-2-2	Lubmin	2018	2021
OST-2-3	AC connection line OST-2-3	Lubmin	2018	2022
OST-3-3	AC connection line OST-3-3	Search area in Sanitz / Dettmannsdorf municipalities	2022	2027
OST-2-4	HVDC connection line OST-2-4	Search area in Siedenbrünzow / Alt-Tellin / Bartow municipalities	2024	2029

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Offshore grid extension in Scenario B 2035 in the Baltic Sea



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Total transmission capacity of offshore grid extension **3.7 GW**

Total length of offshore grid extension (Baltic Sea) **1,235 km**

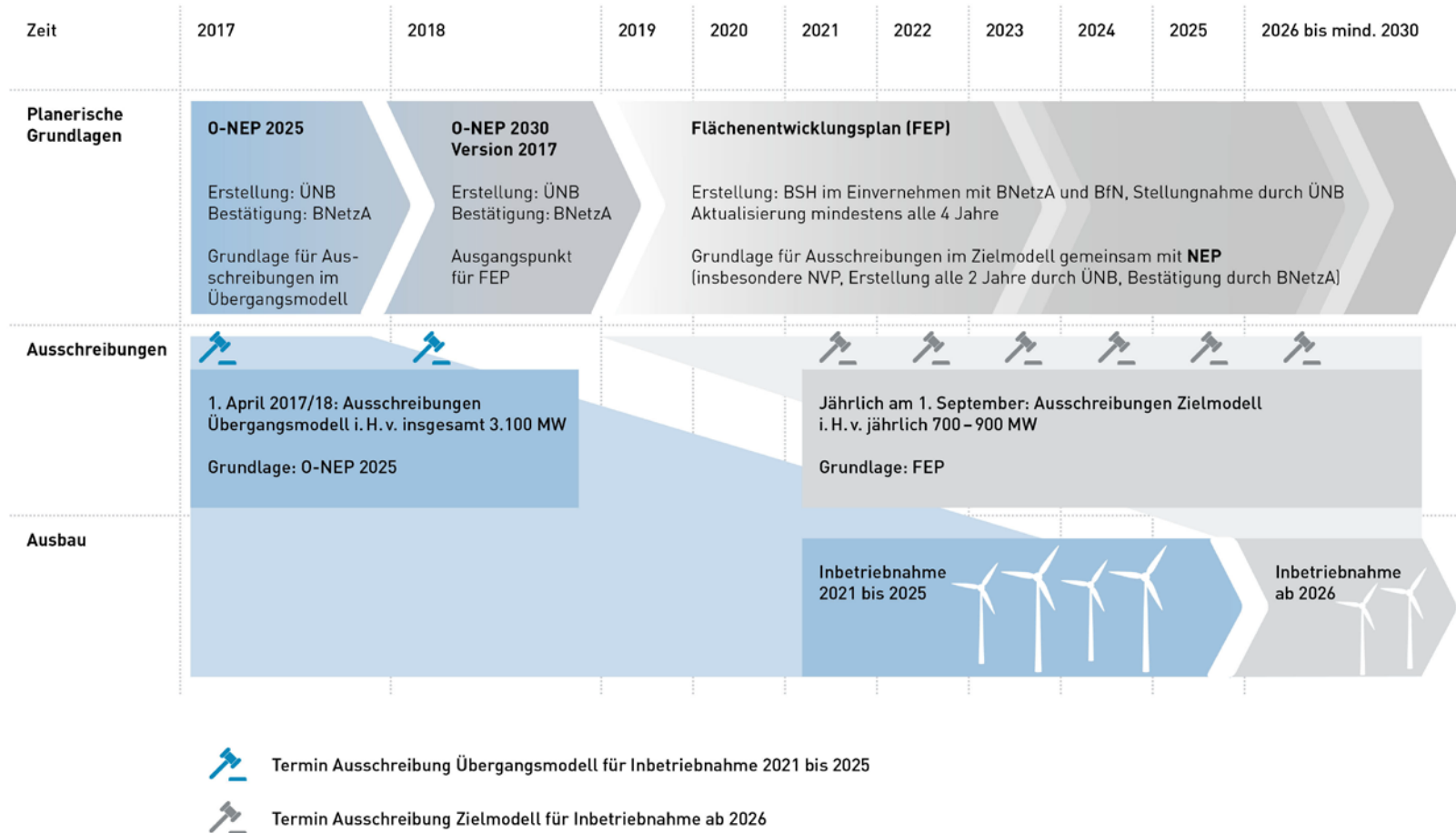
Estimated investment (extension of Baltic Sea offshore grid) **€4.1 billion**

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Transition from Offshore Grid Development Plan to Land Development Plan (Flächenentwicklungsplan)



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Other tables and diagrams from the Grid Development Plan Power and the Offshore Grid Development Plan can be found here:

Grid Development Plan Power (GDP)

<https://tso->

[network.de/ag24/psnep/nep2030version2017/Dokumente/Forms/AllItems.aspx?RootFolder=%2Fag24%2Fpsnep%2Fnep2030version2017%2FDokumente%2FFinale%20Dateien%20NEP%20O%2DNEP%202030%2C%201%2E%20Entwurf%2FAbbildungen%20und%20Tabellen%20NEP&FolderCTID=0x0120006FB3CE6ACD4E544B8887B610F1003C4C&View=%7BCD7E9799%2D0656%2D418B%2D996A%2D2683F5E11A30%7D&InitialTabId=Ribbon%2EDocument&VisibilityContext=WSSTabPersistence](https://tso-network.de/ag24/psnep/nep2030version2017/Dokumente/Forms/AllItems.aspx?RootFolder=%2Fag24%2Fpsnep%2Fnep2030version2017%2FDokumente%2FFinale%20Dateien%20NEP%20O%2DNEP%202030%2C%201%2E%20Entwurf%2FAbbildungen%20und%20Tabellen%20NEP&FolderCTID=0x0120006FB3CE6ACD4E544B8887B610F1003C4C&View=%7BCD7E9799%2D0656%2D418B%2D996A%2D2683F5E11A30%7D&InitialTabId=Ribbon%2EDocument&VisibilityContext=WSSTabPersistence)

Offshore Grid Development Plan (O-GDP)

<https://tso->

[network.de/ag24/psnep/nep2030version2017/Dokumente/Forms/AllItems.aspx?RootFolder=%2Fag24%2Fpsnep%2Fnep2030version2017%2FDokumente%2FFinale%20Dateien%20NEP%20O%2DNEP%202030%2C%201%2E%20Entwurf%2FAbbildungen%20und%20Tabellen%20O%2DNEP&FolderCTID=0x0120006FB3CE6ACD4E544B8887B610F1003C4C&View=%7BCD7E9799%2D0656%2D418B%2D996A%2D2683F5E11A30%7D&InitialTabId=Ribbon%2EDocument&VisibilityContext=WSSTabPersistence](https://tso-network.de/ag24/psnep/nep2030version2017/Dokumente/Forms/AllItems.aspx?RootFolder=%2Fag24%2Fpsnep%2Fnep2030version2017%2FDokumente%2FFinale%20Dateien%20NEP%20O%2DNEP%202030%2C%201%2E%20Entwurf%2FAbbildungen%20und%20Tabellen%20O%2DNEP&FolderCTID=0x0120006FB3CE6ACD4E544B8887B610F1003C4C&View=%7BCD7E9799%2D0656%2D418B%2D996A%2D2683F5E11A30%7D&InitialTabId=Ribbon%2EDocument&VisibilityContext=WSSTabPersistence)