



# Cumulative ecological effects of offshore wind

## Timely insight into the impacts of offshore wind development plans with the KEC

The Framework for Assessing Ecological and Cumulative effects (KEC) establishes an early-stage overview of the ecological effects of both existing and planned offshore wind farms at an early stage. This makes it possible to take well-informed policy decisions for the development of offshore wind energy. The KEC is part of Wozep, the Offshore Wind Ecological Programme.

### Supplying a knowledge base

The knowledge base is an up-to-date collection of the latest scientific insights and methods for calculating the impact of offshore wind.

### Understanding mitigation requirements

KEC calculations make it possible to determine the type of mitigation measures and the level of mitigation required. That may result in a requirement in the site decisions.

### Identifying knowledge gaps

The knowledge gaps are identified using the knowledge base. The smaller these gaps are, the more accurate the calculations of ecological effects. The knowledge gaps serve as input for, among other things, the Wozep research programme.

### Step in the legal assessment

The cumulative KEC calculations may reveal a possible decline in the size of a population. A comparison is made to see whether that decline exceeds the threshold set by the Ministry of Agriculture, Fisheries, Food Security and Nature. That insight can be used in the EIA and in the legal assessment in the site decisions.

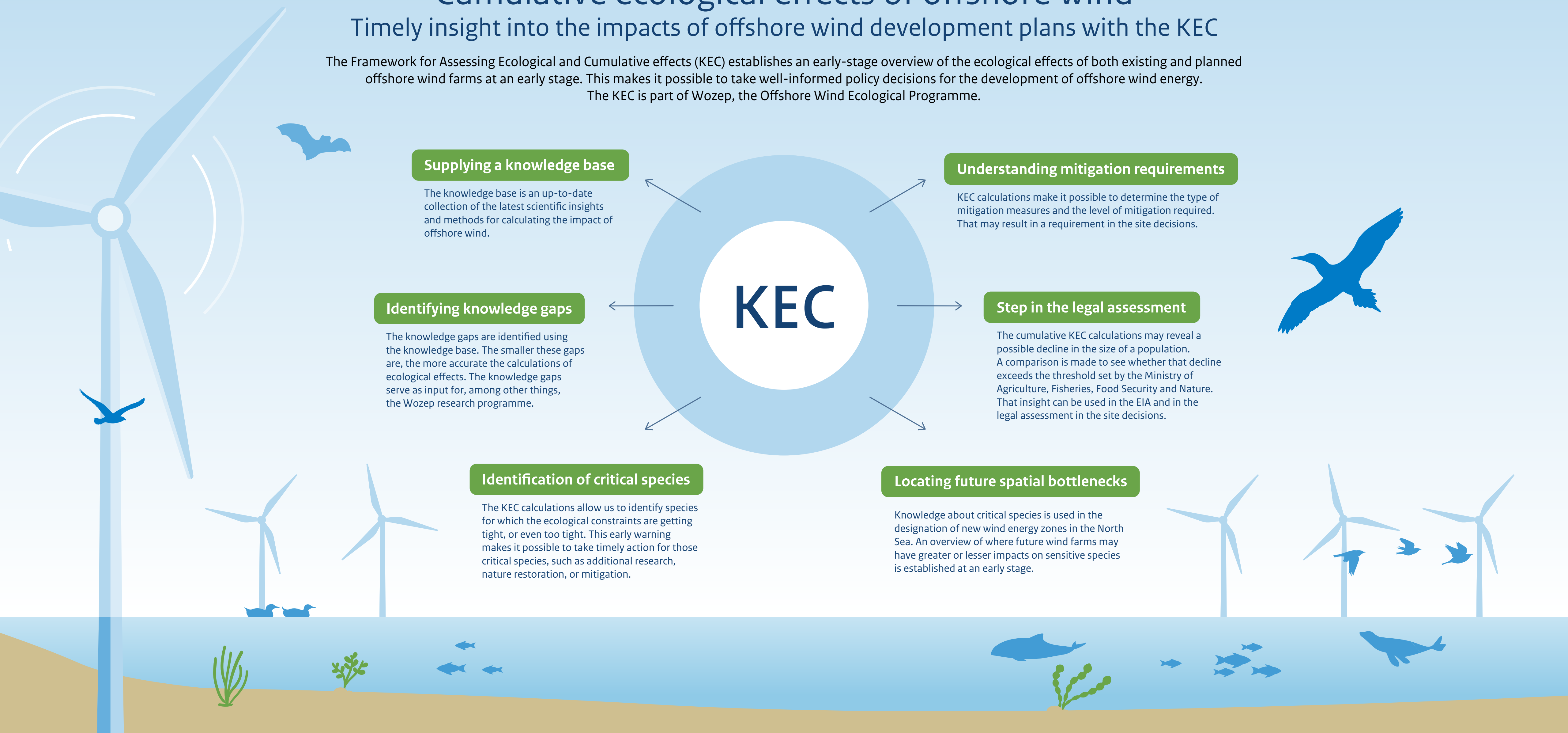
**KEC**

### Identification of critical species

The KEC calculations allow us to identify species for which the ecological constraints are getting tight, or even too tight. This early warning makes it possible to take timely action for those critical species, such as additional research, nature restoration, or mitigation.

### Locating future spatial bottlenecks

Knowledge about critical species is used in the designation of new wind energy zones in the North Sea. An overview of where future wind farms may have greater or lesser impacts on sensitive species is established at an early stage.





# The steps in the KEC calculations

## Insight based on the latest knowledge

The KEC consists of a range of models, methodologies and knowledge. A number of fixed, successive calculation steps is used to determine the future (cumulative) effects on populations of protected species.

The outcome of those steps is considered in relation to threshold values or standards set by the government. This makes it possible to identify the species for which ecological space constraints are becoming tight due to the construction and operation of existing and planned offshore wind farms, and to determine whether an ecological boundary is being crossed. This allows for timely measures to be taken.

**Additions and updates**  
The KEC is regularly updated with new research and improved models. Therefore, the knowledge base component is revised on an annual basis. Calculations for a new Offshore wind energy roadmap are made about every two years.

