Future Exploration 3
Example: steps 1-3

Exploring the future: Scenario Analysis

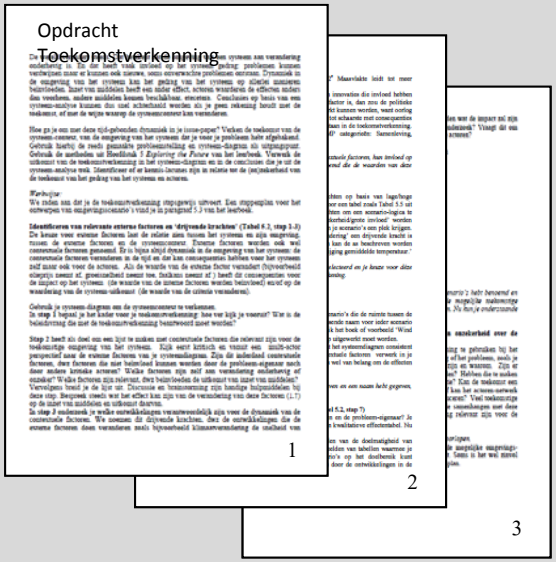
Tineke Ruijgh

- Why and whereto?
- Main steps
- **Example**
- Checks and interpretation
- Application in issue-paper
- Additional sources

This video: Step-by-step explanation

Case: Locations for off-shore wind energy

Scenario analysis



- Assignment is a cookbook receipe……

- But the ingredients are not ‘ready-made’…….
  - Contextual factors
  - Driving forces
  - Scenario Logic

Scenario Analysis

Structured method

Step 1-3

- Key question
- Contextual factors
- Driving forces

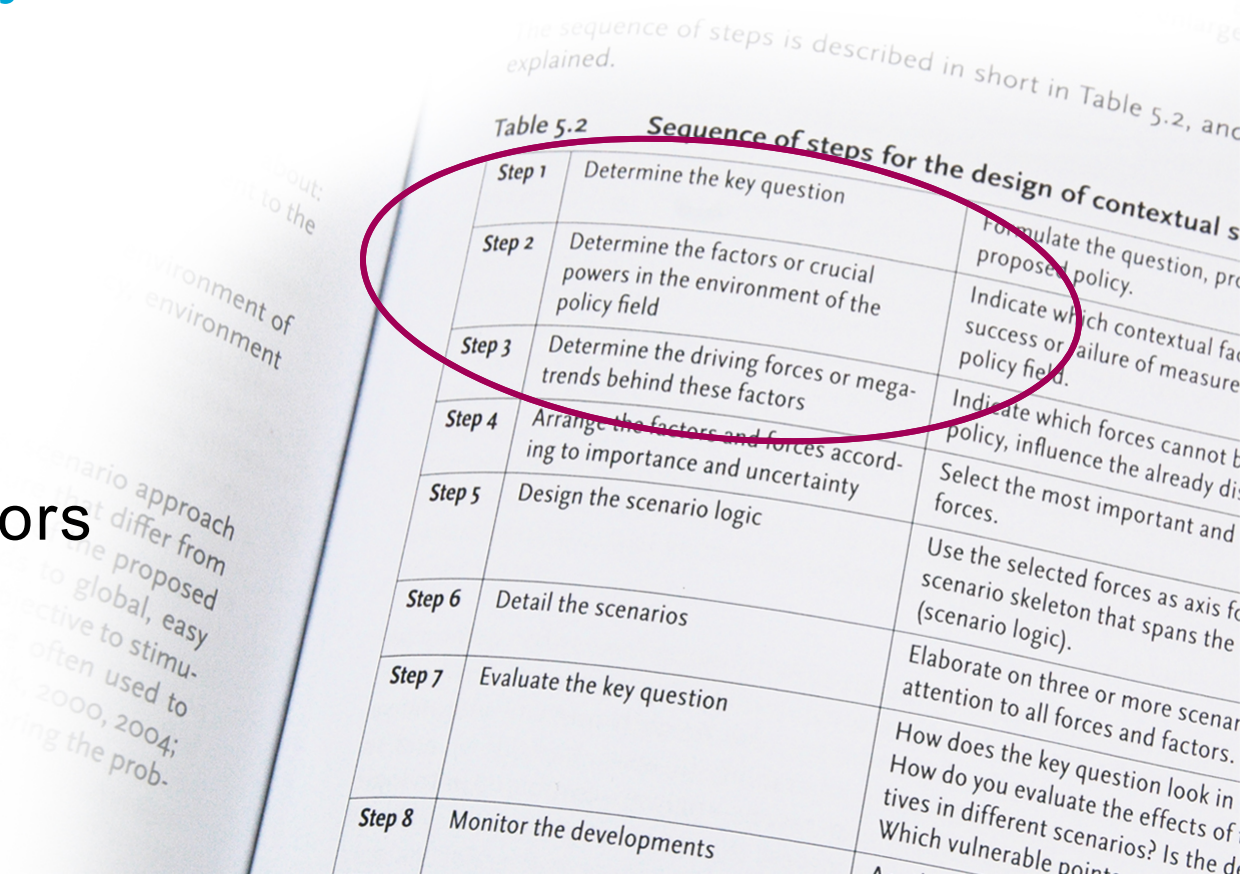


Table 5.2 Sequence of steps for the design of contextual s

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Step 2	Determine the factors or crucial powers in the environment of the policy field	Indicate which contextual fa success or failure of measure policy field.
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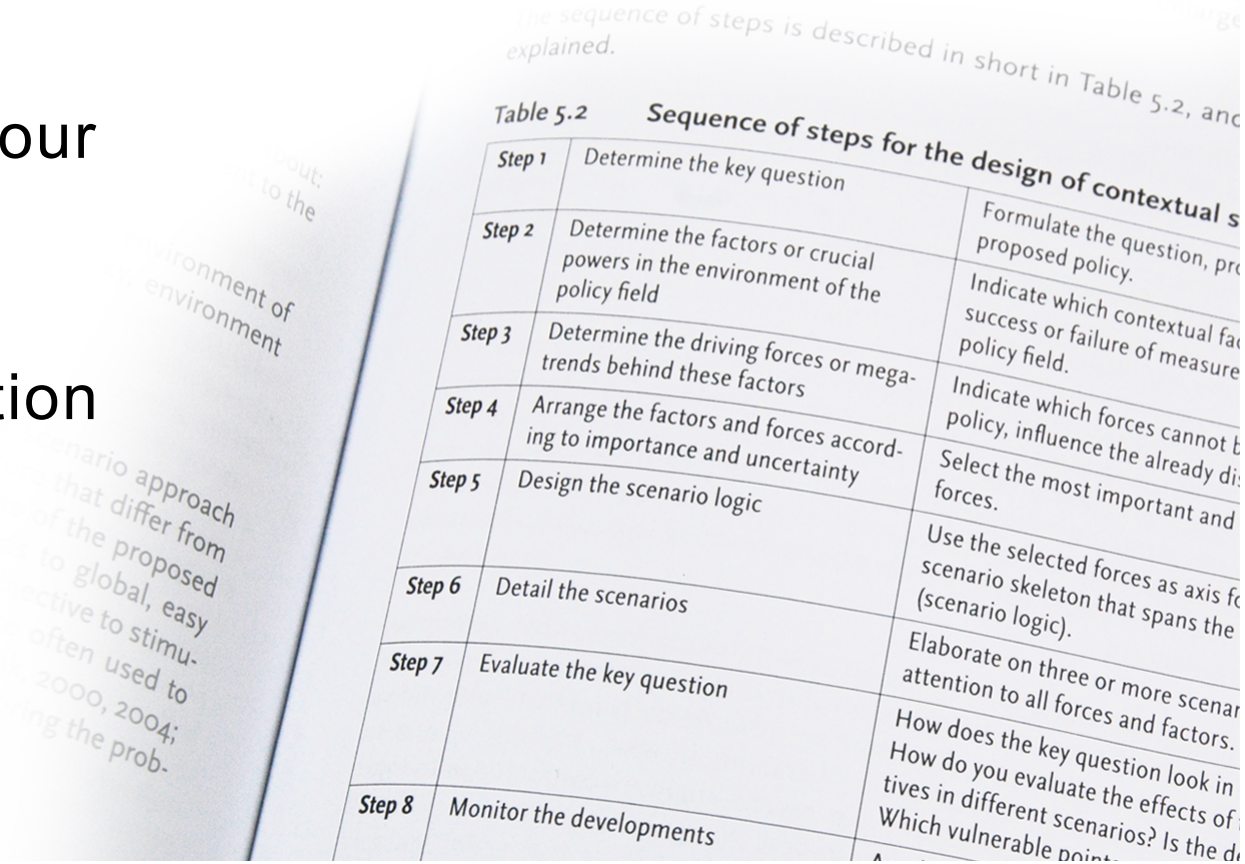
Step 8	Monitor the developments	Which vulnerable point

Step 1: Determine key question

Use results from your analyses so far:

- Problem formulation
- Time frame



The sequence of steps is described in short in Table 5.2, and explained.

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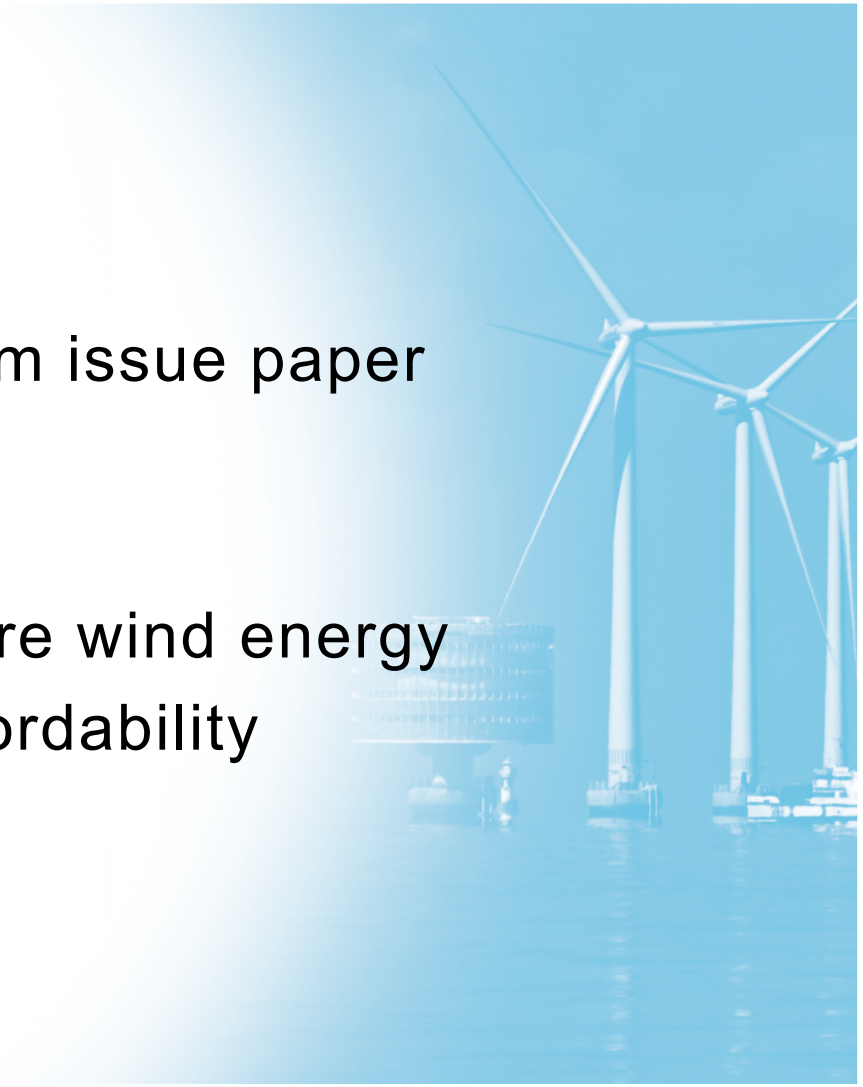
Step 1

Use the problem statement from issue paper

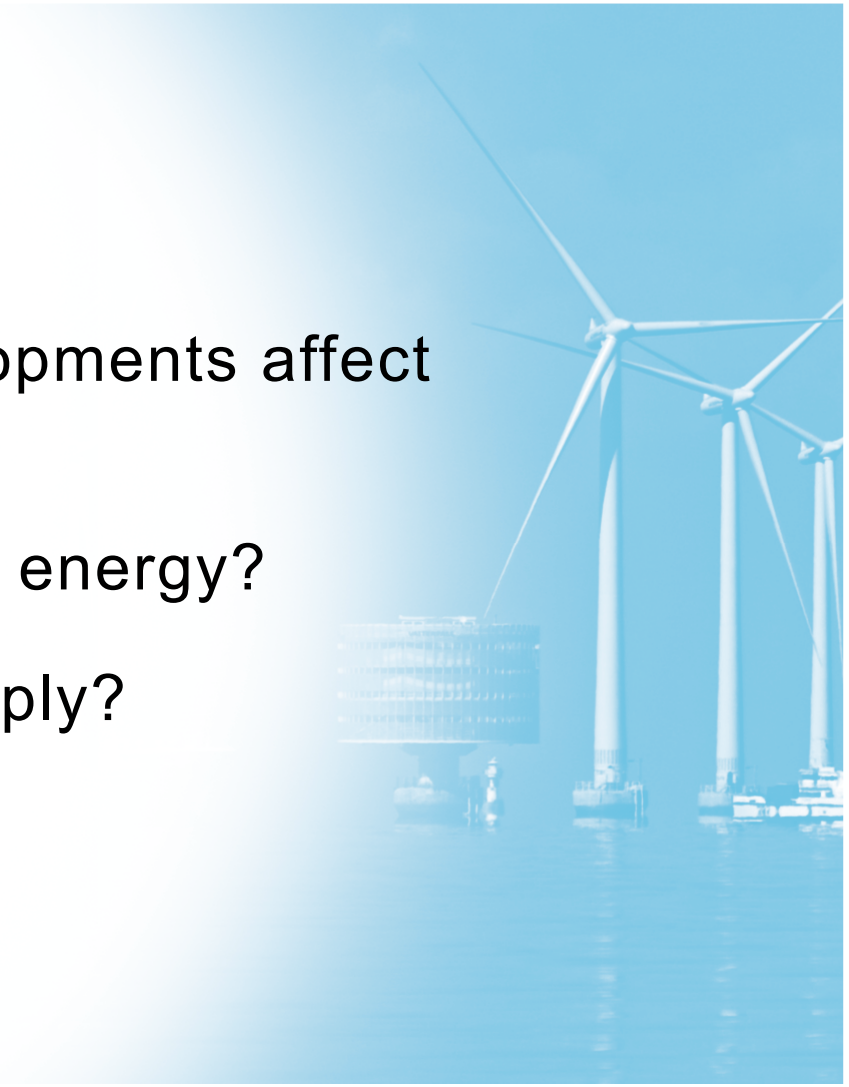
What can government do
to increase potential for offshore wind energy
without loss of reliability or affordability
of electricity supply?



Step 1:

In what ways may future developments affect

- potential for offshore wind energy?
- reliability of electricity supply?
- affordability of electricity?



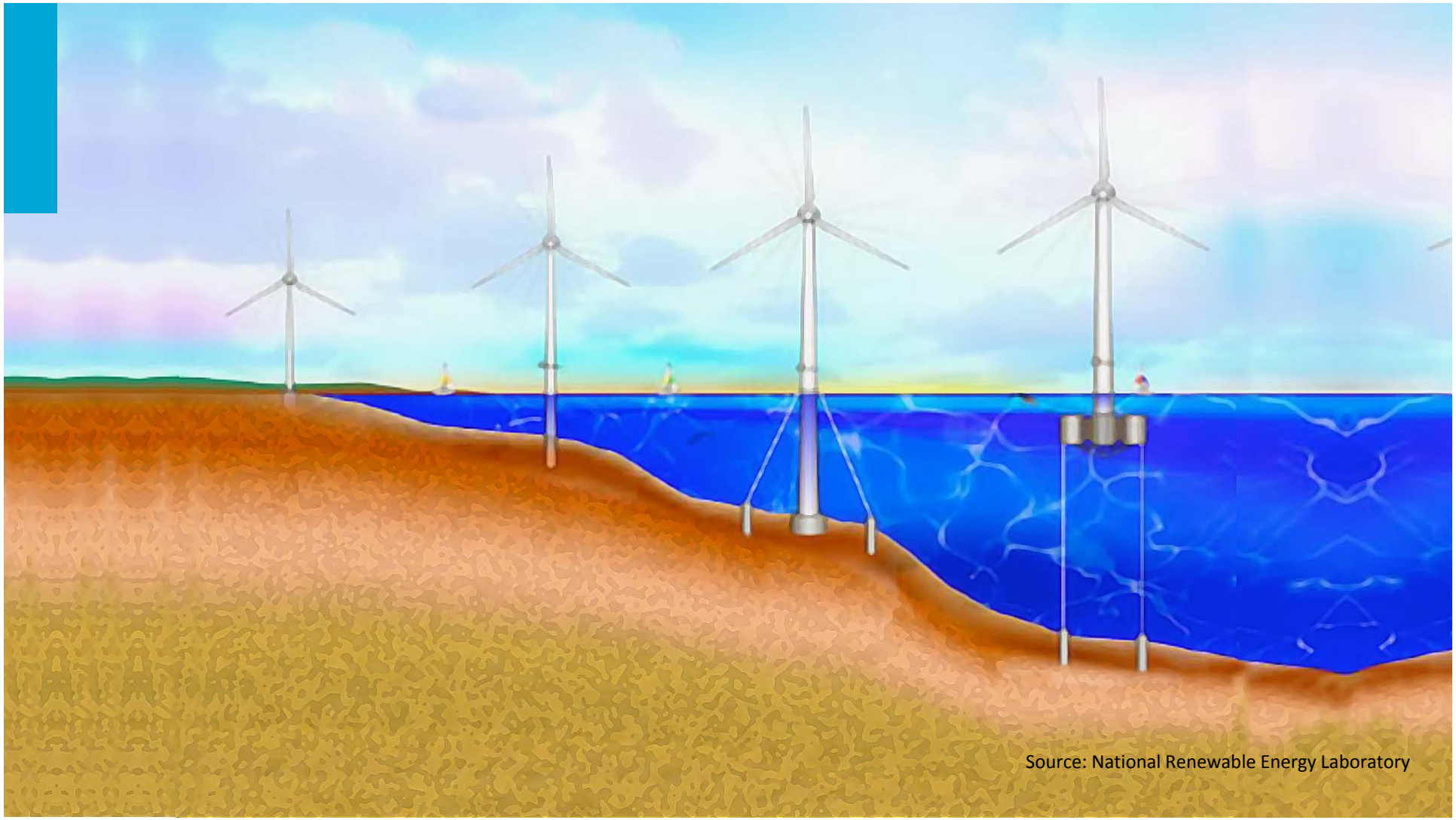
Spatial planning

Wind farms

Shipping

Nature / Fishing grounds

Oil platforms

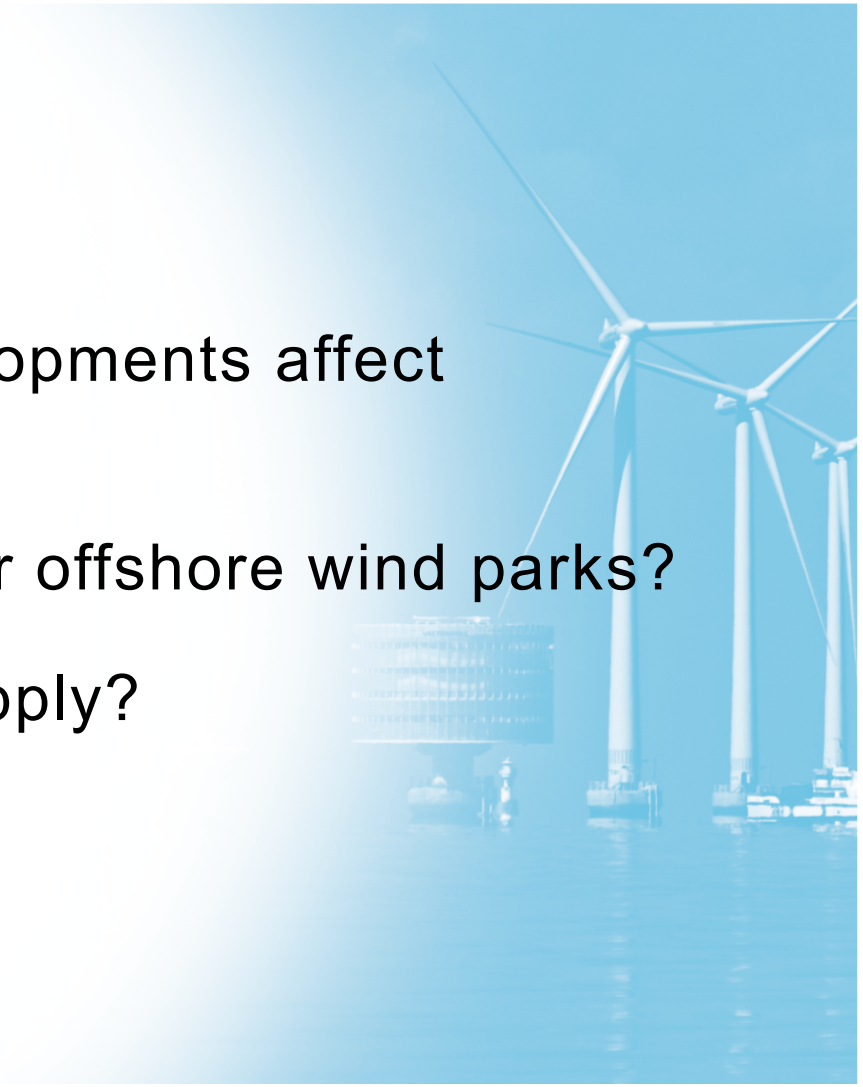

Source: National Renewable Energy Laboratory


Finnlines

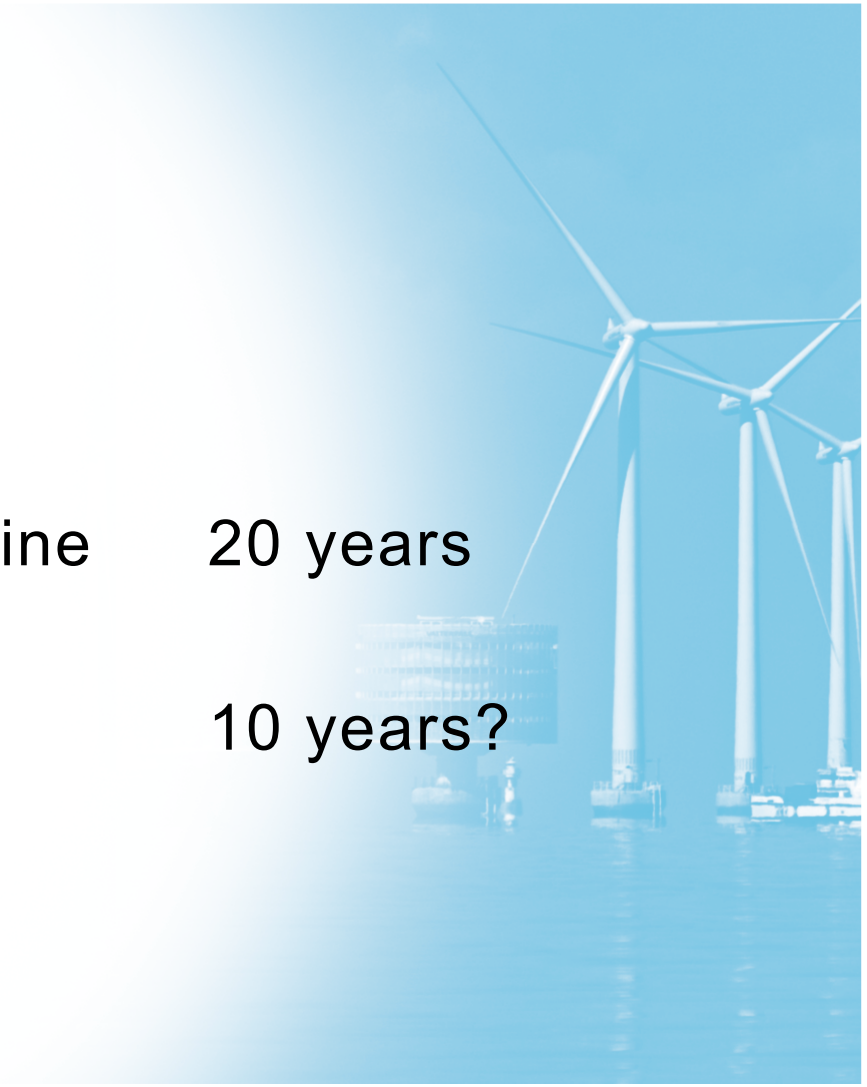
Step 1: Key question

In what ways may future developments affect

- availability of locations for offshore wind parks?
- reliability of electricity supply?
- affordability of electricity?



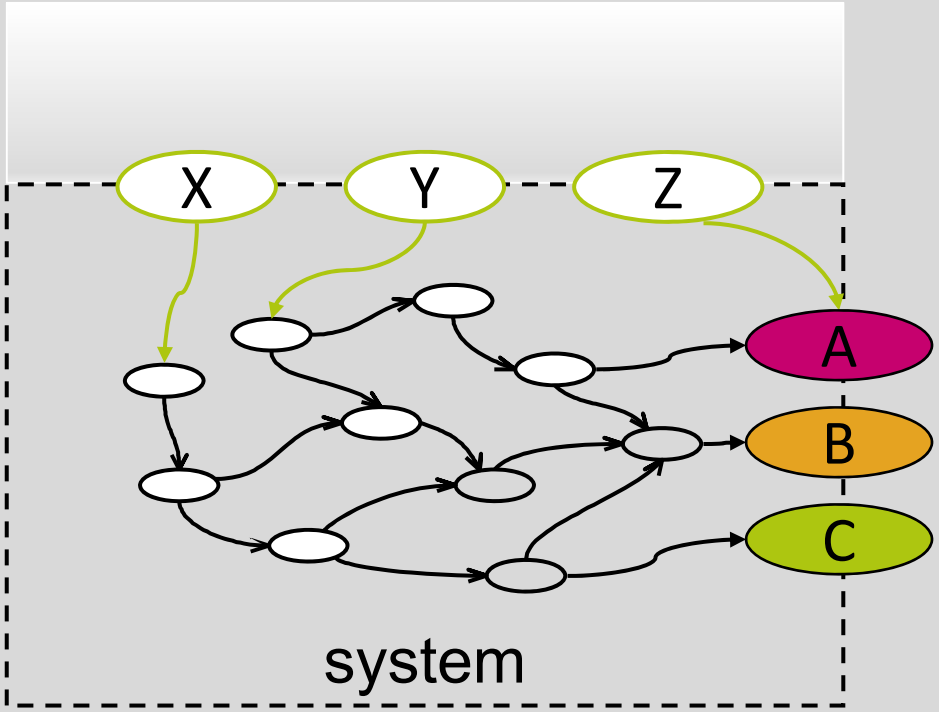
Time frame: 20 years



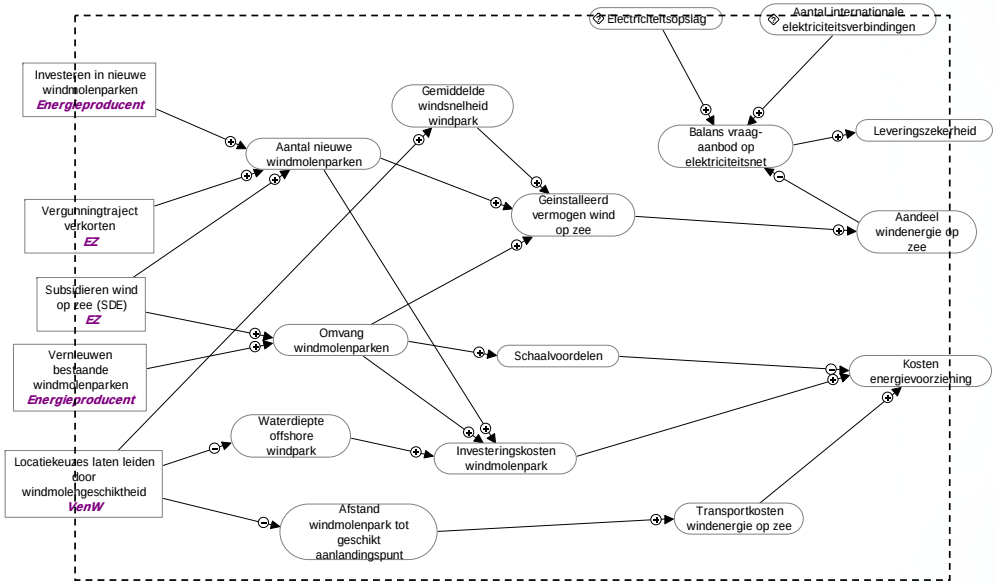
Design life-span of a wind turbine	20 years
Life span of energy policy…….	10 years?

Step 2: Determine contextual factors

Use system diagram



System diagram?



Multi-actor √ Contextual factors √

Do research.
Brainstorm.
Use system diagram.

Helpful questions

Inside out

– What internal system factors are sensitive to contextual factors?

Outside in

– What if…. ?

Example….

Balance demand/supply is internal factor…..

Energy storage capacity is related, contextual factor

Source: A123 Systems

Example….

Area for wind parks

is internal factor….

‘EU guidelines’

is a related, contextual factor

Helpful questions

Inside out

– What internal system factors are sensitive to contextual factors?

Outside in

– What if…. ?

Example….

What if… the German wind energy supply grows very fast?

Example….

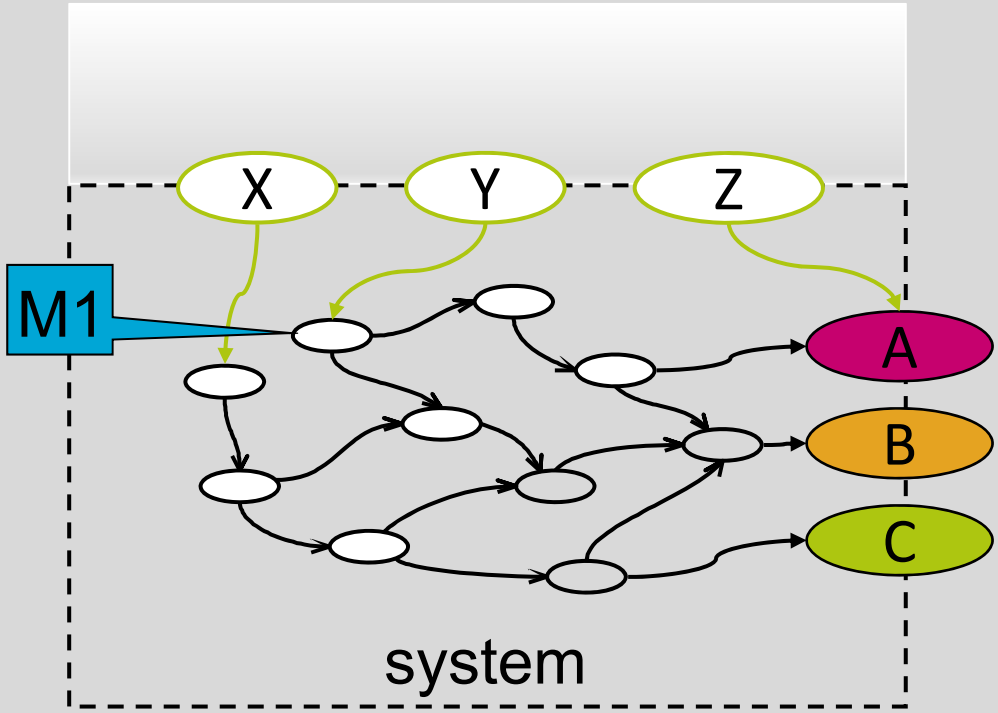
What if … the wars in the Middle-East escalate?

Contextual factor: oil price!

15-20 Contextual factors

Contextual factors
1. Energy storage capacity
2. Spatial planning guidelines
3. German wind energy supply
4. Oil price
.....
18. .....

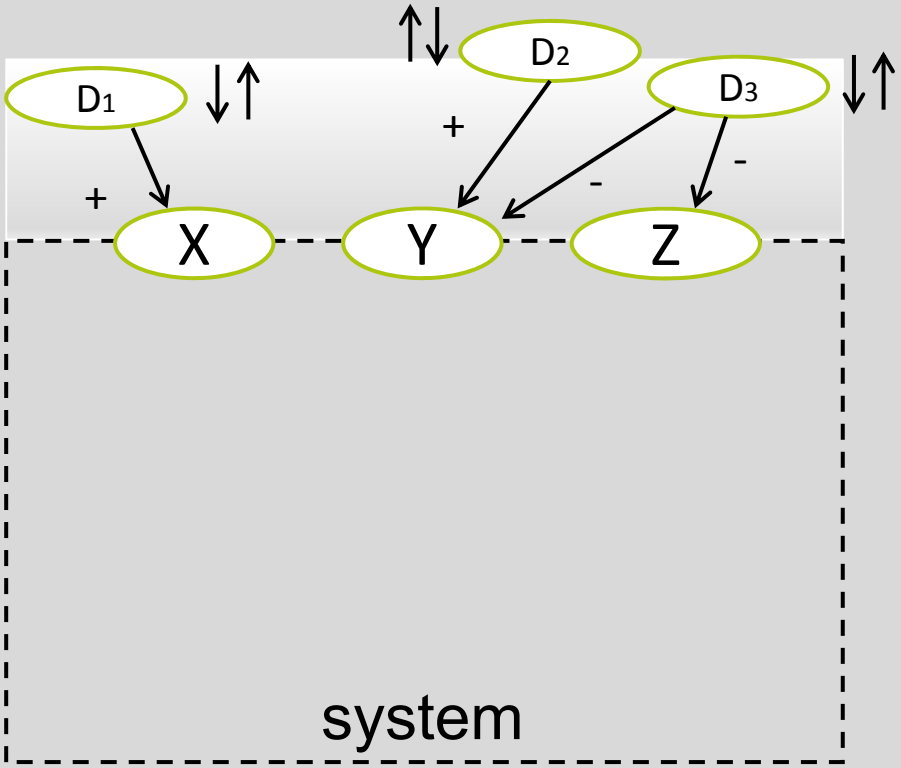
Relevance of contextual factors?



List with 10-20 contextual factors

Contextual factors	Impact on criteria
1. Energy storage capacity	+
2. Spatial planning guidelines	+/-
3. German wind energy supply	-
~~4. Oil price~~	0
.....	
18.	-

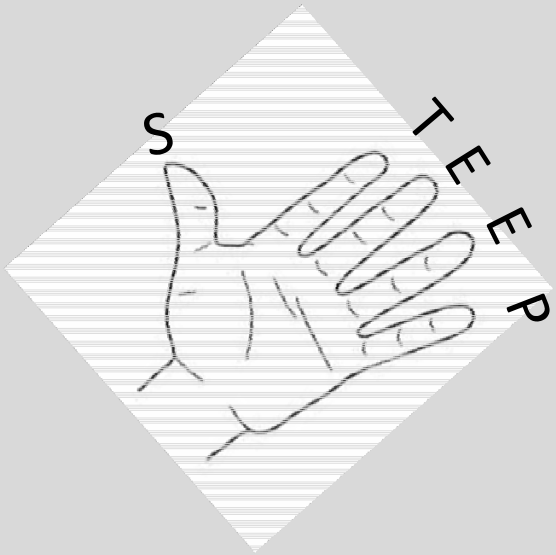
Step 3: Determine driving forces



Do research. Brainstorm.

Changes in system context?

- Trends. Disruptions…..
- Promises of innovation
- Crises



How can the system context change valuation?

Example…

X: Energy storage capacity

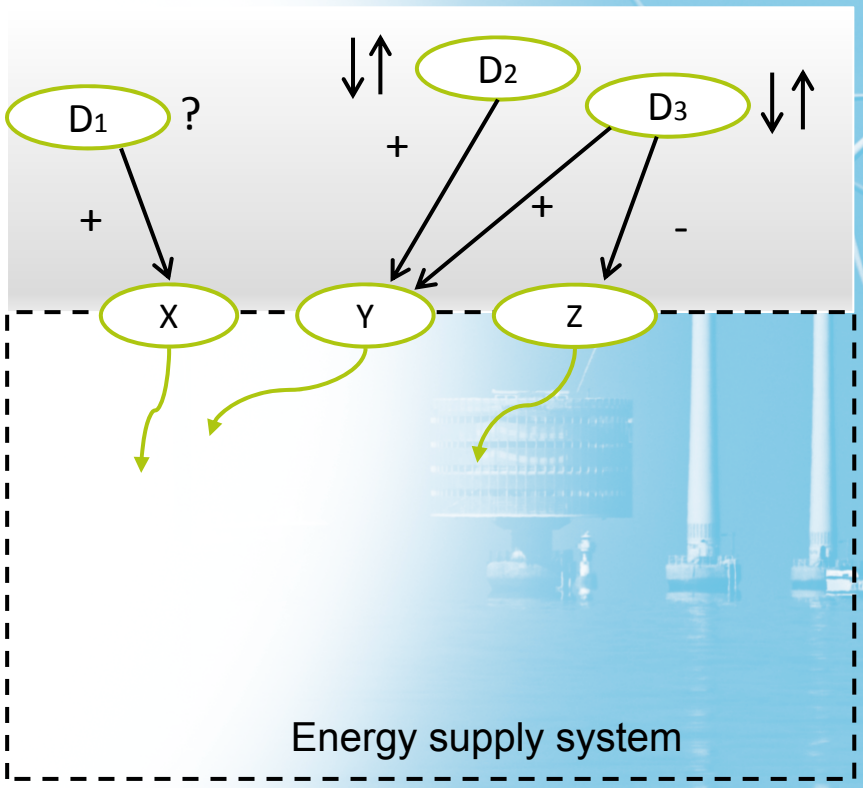
Y: EU Guidelines

Z: German wind energy

D1: Innovation energy storage

D2: Power of EU commission

D3: German economy



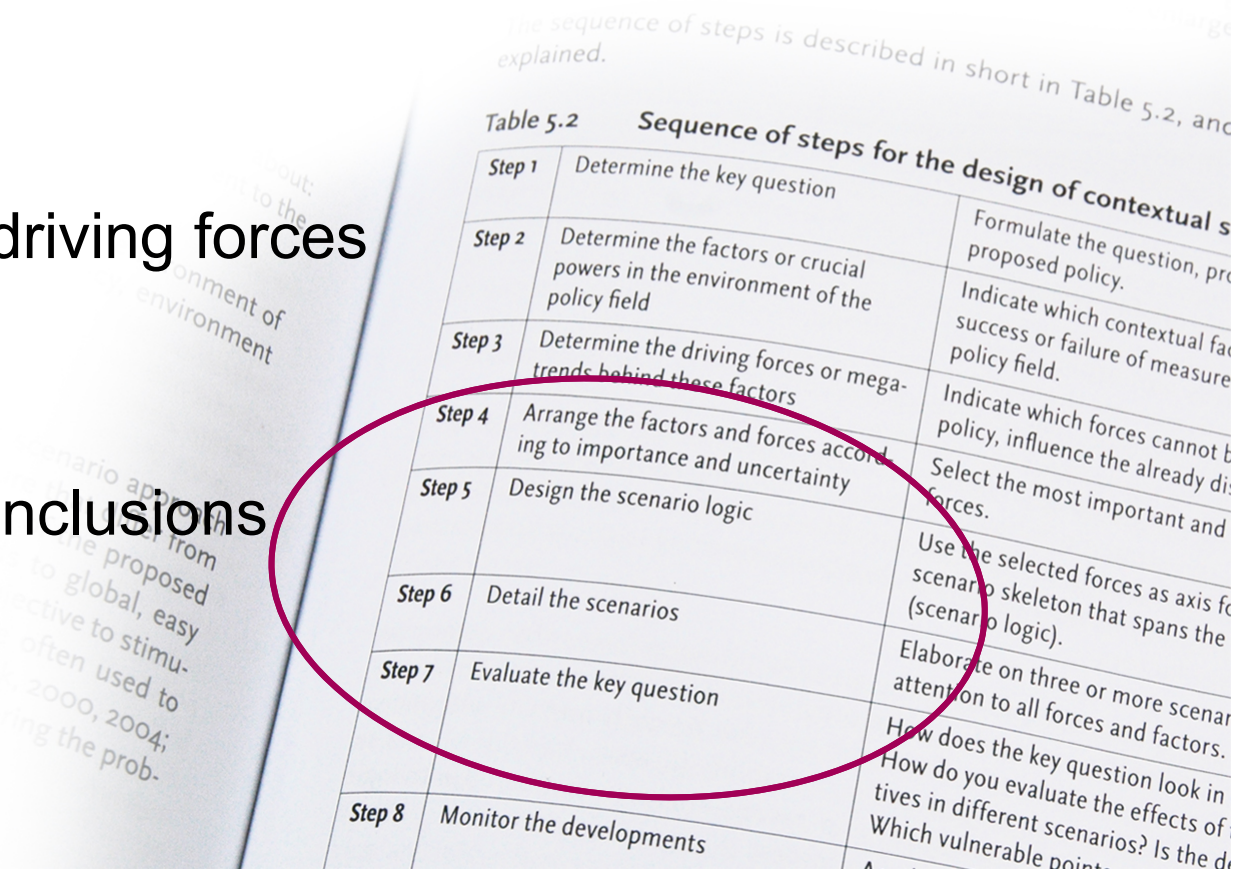
15-20 Contextual factors

Contextual factors	Impact on criteria	Driving force
1. Energy storage capacity	+	D1 / techn.
2. Spatial planning guidelines	+/-	D2/ polit.
3. German wind energy supply	-	D3 / econ.
4. Int'l connections network	+	D3 / econ.
…..		
18. Persons/household	-	D9/ soc.

Next video clip

Step 4-7

- Classification of driving forces
- Scenario logic
- Scenario writing
- Interpretation, conclusions



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Thank you for your attention!