

WADDEN SEA FORUM

Thematic Group Energy

Fifth Meeting (TG E 5)

Oldenburg, 10-11 March 2004

FINAL MINUTES

Agenda item 1. Opening (welcome, adoption agenda)

*Documents: Draft agenda TG Energy (TG E 5-1)
List of Composition TGs (TG E 5-1.1)*

The meeting was opened by Mr Schuhbauer, the chairperson of the Thematic Group Energy, who welcomed the participants to the fifth meeting of the TG Energy.

Mr Töpken from the EWE gave an introduction about the EWE and its training center and pointed out the excursion to the logistic center, where further information about the business of the EWE would be given.

The meeting **adopted** the proposed draft agenda, which is in **Annex 1**, without amendments. A list of the participants is in **Annex 2**.

Agenda item 2. Adoption Minutes TG-4

Document: Draft minutes TG Energy (TG E 4)

The draft minutes were adopted without any amendments.

Agenda item 3. Announcements

No announcements were made.

Agenda item 4 External studies

The secretaries informed the meeting about progress in the external studies. Three studies had been printed until now. It concerned the Danish and German socio-economic studies and the Oxford Brooks policy review study. The latter two had been distributed by regular mail to all Forum and TG members. The sustainability study had been finalized and would be printed soon. Four studies were still ongoing. These were the Prognos integrated socio-economic analysis, the Prognos perspectives study, a study into differences in environmental impact assessment in the three countries and, finally, a study into gaps in shipping safety regulations. The latter would be presented at the upcoming WSF-4 meeting, in a special half-day session.

A first draft of the Industry and Energy part of the Prognos perspectives study also has been sent to the TG members. The meeting was asked to comment on the study within 10 days. The comments will be taken into consideration when elaborating the final version.

Agenda item 5. Strategy development

Documents: TG E 5.5-1-1 Draft outline submission to WSF

TG E 5.5-2-1 Development + testing sector specific strategies

5.1 Introduction and presentation of an outline to WSF-4

The secretary briefly explained the outline of the submission to the WSF. The structure of the “end product” of the TG Energy is the same as for the other TGs in order to enable a common and integrated product. The meeting **agreed** to further elaborate on the different sections following the outline.

The draft submission to the WSF-4 is in **Annex 3**. The structure of this submission document is different to the structure of the TG discussion and the documented results. Therefore, the results are additionally given in **Annex 5**.

5.2 Presentation results of testing strategy elements

The results of the testing and the line of reasoning could generally be supported. With respect to LNG terminals Mr. Krijnen stated that the need for it could be well visible after 2010 – 2015, and that the Wadden Sea region could be designated as a possible location. The UK would be running out of natural gas and Russia would be a very uncertain supplier. Norway would not be able to cover the demand, which would increase steadily. He summarized that the gas market would become tight in 5-10 years in Northwest Europe and that therefore the request for LNG would lead to the installation of a few terminals even in the Wadden Sea region.

With regard to the listed strategy element “spatial planning”, it was **agreed** to deal with this as a facilitator for almost all strategies and not as a strategy itself.

Finally, the meeting amended the list of strategy element testing with the issue of extraction of hydrocarbons in the WSR, which is also reflected in the proposed TG E strategies.

The agreed list of strategy elements is in **Annex 4**.

5.3 Discussion Strategy + identification of obstacles, recommendations and projects

Following the outline introduced under agenda item 5.1, the meeting first discussed the visions of the sector, using the draft in document TG E 5.5-2-1 as a basis.

On initiative of the chairman, the meeting **agreed** to formulate the visions as realistic as possible.

Even if the visions reflect a view of the future, realistic assumptions should serve as a basis.

With regard to vision issue 1, it was said that savings were very much life style related. Savings of up to 50% were seen as too optimistic and the meeting stated 20% as more realistic, but still ambitious.

Due to the fact that the energy consumption had been quite stable over the last 10 years or had even slightly decreased, an energy saving of 20% was achieved.

With regard to vision issue 2, the meeting stated that the increase of energy efficiency encompassed the wish that no circumventing would take place by outsourcing of production to low standard countries.

The vision about substitution of coal and nuclear power was reformulated to using renewables, and visions with regard to the vulnerable ecosystem as well as to the WSR, as demonstration area for sustainable energy use, were amended (see **Annex 5**).

In a second step, the meeting improved the list of strategy elements and agreed on a number of most important ones being addressed in the sector strategy:

- Wind energy
- Solar and biomass energy
- Combined heat and power (CHP)
- Liquefied natural gas (LNG)
- Hydrocarbons
- Energy saving

For these strategy elements, appropriate projects or measures were discussed to figure out concrete activities to implement the strategy.

Additionally, current obstacles hampering the implementation of the sector strategy were identified for each element. Finally, the meeting agreed on a set of recommendations in order to indicate solutions to reach the aims and to implement the strategy for the development of a sustainable energy sector.

The results of the discussion about strategy elements, measures, obstacles and recommendations are in **Annex 5**.

Agenda item 6. Sustainability Test

Document: TG E 5.6-1 Sustainability matrix

The meeting tested the selected strategy elements for sustainability, using the sustainability matrix developed at the WSF 3 meeting. Due to time constraints, this was done for two strategies and the secretariat was mandated to complete the testing which would have to be adopted by the participants through email contacts.

The outcome of the testing is in **Annex 6**.

Agenda item 7. Information about the further process

The secretaries informed the meeting that the WSF-4 meeting would have to decide about the further procedure with regard to the outcome of the TG work. The TG products would have to be integrated, i.e. synergies, discrepancies and contradictions would have to be discussed and an integrated draft product developed. The outcome of the integration group would have to be discussed at the WSF-5 (15-16 September 2004) and presented at regional workshops in November 2004.

Agenda item 8. Any other business

None.

Agenda item 9. Closing

The chairman thanked all participants for coming and their cooperation in all TG meetings and closed the meeting at 13:00 hours on Thursday, 11 March 2004.

Annex 1

WADDEN SEA FORUM
Thematic Group Energy
Fifth Meeting (TG E 5)
Oldenburg, 10-11 March 2004

AGENDA

1. Opening (welcome, adoption agenda)
2. Adoption Minutes TG-4
3. Announcements
4. External studies
5. Strategy development
6. Sustainability Test
7. Information about the further process
8. Any other business
9. Closing

Annex 3**WADDEN SEA FORUM****Sustainable Energy in the Wadden Sea Region****Submission to WSF-4****March 2004****The VISION**

The vision of the energy sector includes the following issues:

- **Saving energy of more than 20 % of the total consumption within 20 years**
- **Increase of the energy efficiency (transformation, processing)**
- **Preferred use of renewables and gas as primary energy sources**
- **Securing of energy supply for the society**
- **Power generation and exploitation of energy resources in the Wadden Sea Region to be in harmony with the resilience of the sensitive ecosystem**
- **The Wadden Sea Region as demonstration area for sustainable energy use**

The Strategy

In order to work towards the Vision, the strategy of the energy sector contains the following elements:

1. Wind energy production in the Wadden Sea Region

Wind energy has a substantial share in electricity production in the WSR. It is still a growing market with a well-known technology. The locations of the future wind parks are considered off-shore and do require installations of various facilities both, on- and off-shore. Additionally, integrated planning is a precondition to undertake all necessary activities with respect to best environmental practice, to minimize environmental impacts and to take nature protection sites into consideration.

2. Solar energy and biomass as renewable energy production

The main recent elements of solar energy are collectors for heating water. Solar cells for electricity generation is an available technology but still rather expensive and not very efficient. Big technology breakthroughs are expected. The technology of using biomass for energy supply is available however on an old standard but new plants could contribute to minimizing the amount of organic waste and to reducing N₂ emissions in the agricultural sector.

3. Extended development of combined heat and power systems (CHP)

CHP, also known as cogeneration, is an efficient, clean, and reliable approach to generating power and thermal energy from a single fuel source. By recycling waste heat, CHP systems achieve typical effective electric efficiencies of 50% to 70% — a dramatic improvement over the average 33% efficiency of conventional fossil-fueled power plants.

4. Construction of LNG terminals

Liquefied natural gas (LNG) was seen for many years as little more than a way of moving gas to markets where pipelines are not feasible. Now it is seen by the stakeholders as a potential of meeting the increasing gas needs of a global world. In terms of market outlook, Europe is expected to be a significant growth market. Expected gas supply gaps in the USA and Europe, and reducing LNG costs, could make LNG an attractive prospect for the growing energy demand.

5. Extraction of hydrocarbons in WSR

In the WSR, there are some hydrocarbon resources which are considered exploitable within the next 20 – 30 years. In the Netherlands, the Wadden Sea gas deposit is about 35 billion m³, which corresponds with the Dutch consumption of one year. The drilling for German Wadden Sea oil (Mittelplate) has a share of about 2% of the total oil supply in Germany, a small part but a contribution to the strategy of getting more independent from imports.

6. Implementation of policies for energy saving and increase of efficiency

Energy savings includes:

- Energy savings for consumers with an emphasis on a reduction of more than 20% in the total private consumption.
- Energy savings in building blocks and service centers.
- Energy audits, benchmarks, labels (for industry) contribute to savings.
- Taxation & subsidies and simplified regulations are also part of saving policies.

Obstacles

The implementation of a sustainable energy strategy is currently hampered by the following:

- in Germany it is planned to install 40,000 MW capacity of wind energy generation (off shore), which is a third of the total existing electricity production capacity (110.000 MW). The needed facilities have big impacts on the environment. (facilities needed: converters, 1,000 are in discussion; power cables, each 200 MW for AC and 1000 MW for DC)
- coastal areas have to pay higher prices for wind generated energy, subsidies for wind energy have to be regularly distributed to all consumers
- off-shore wind parks constitute risks with regard to shipping safety
- there is not enough space for near-shore wind parks, and off-shore sites might be too far for energy transport
- there is no available storage capacity for wind generated electricity
- only large scale use of solar energy will visibly contribute to an alternative energy market, this hampers new initiatives
- low efficiency of solar cells as well as the high prices of the generated electricity hinder the installation
- the little knowledge of possibilities and advantages of using organic waste leaves this energy source unexploited
- the production of only electricity by CHP is too expensive and cannot compete with other production lines
- LNG terminals constitute a risk for men
- the need for huge industrial areas and deep water ways could lead to impacts on the environment
- possible impacts on the environment with regard to gas exploitation in the Wadden Sea, like the subsidence of the area above the gas fields (suggested 10cm within 20 years) causes resistance to exploitations in sensitive areas
- there are still risks of polluting the Wadden Sea ecosystem by hydrocarbons

Recommendations

In order to remove the above obstacles and to clear the way for a sustainable energy strategy the following is recommended:

- to implement wind parks outside the 12sm zone and not near-shore as is still practise in Lower Saxony
- subsidies for wind energy must be regularly distributed to all consumers
- for safety reasons, a risk assessment for off-shore wind parks must be undertaken; an insurance must be compulsory for the wind park operators
- to initiate pilot projects to collect experience with distant off-shore sites

- solar energy is a good alternative energy source, it has to be strongly promoted and supported
- the challenge of using biomass, particularly organic waste, should be taken seriously by the government and new guidelines should be implemented
- awareness should be increased for Combined Heat Power systems (CHP) to implement efficient energy generation systems
- an EIA, as well as a risk assessment have to be carried out for the installation of LNG terminals
- before planning LNG terminals in the WSR, a cooperation with other areas like Rotterdam should be taken into account
- if LNG terminals in the WSR are necessary to secure the energy supply in the future, the installation should concentrate on one location to minimize the impacts
- the oil and gas drilling should be carried out from on-shore whenever technically possible
- use the existing facilities and infrastructure in the near future (10 years), to avoid severe economical disadvantages
- the exploitation of oil and gas in the sensitive Wadden Sea requires the highest technological standard and best environmental practise. These knowledge is a benefit which can be used in other areas for a sustainable hydrocarbon supply
- to introduce policies for higher taxation of heavy energy use and for supporting energy saving initiatives should be taken which aim at a changing behavior in consuming energy

Projects

The following projects are considered relevant for specifying the strategy

- to strengthen alternative energy sources, wind energy should be emphasized by further projects in the WSR
- development of spatial plans to remove single turbines and small wind parks and, concentration of wind turbines at some areas to minimize space use on-shore (up to 1% of a county in SH)
- development of an integrated planning for off-shore sites (EEZ) and stimulation of applications
- new programs are needed to promote and support the use of solar energy (also financial subsidies are still needed)
- installation of solar energy facilities in tourist areas and for summer houses, to produce e.g. hot water
- initiation of pilot projects by installing of solar cells for remote locations
- the counties should initiate decentralized energy supply to also use heat where it is needed like in hotels, pools, glass houses.
(e.g. coal based CHP systems are running with an efficiency of 75%)
- LNG terminals have so far been constructed outside the WSR, e.g. in the UK, Italy, Spain and France, which underlines the growing market share. A study for future requirements of the WSR should be undertaken
- a campaign could be started to inform the public about possibilities in energy saving.
- labels for low energy use in production and processing should be awarded
- more eco-team programs (cooperation in the neighbourhood) should be initiated to save energy
- decentralized energy management systems should be implemented. This includes e.g. different prices for industry and households during day and night
- the WSR is a region with high natural and cultural values and vulnerable to climate change. Therefore, a Wadden Sea region wide program should be initiated to promote renewable energy and energy saving systems in order to maximize demonstration value in tourism areas. (pioneer role of WSR)

Annex 4

Strategy element testing in the four scenarios

Strategy elements	Cautious World	Future Unlimited	Satisfied Citizens	Challenging World
1. prioritize renewable energy production	++ summary	+ summary	+ / ++ summary	+ summary
a. wind energy	++ known technology; off-shore parks	+ moderate, competition with others	++ emphasis on renewable, best known	+ new investments in bigger plants
b. biomass (large scale, organic waste)	0 no large scale; used by farmers	+ few large scale; farmers don't care	+ / ++ some large scale as fuel alter-native; used by farmers for ecological reasons	+ new large scale market; also new technologies using organic waste
c. solar (collectors)	0 almost no investments, too expensive	+ improvement by efficiency, therefore competitive	+ subsidies! ecological conciseness	0 no installations because of weak economy
2. extended development of combined heat and power systems (CHP)	++ savings by better efficiency	+ increasing consumption require new sources	++ sustainable production, decentralization	+ / ++ new suppliers; cheap & efficient energy
3. construction of LNG terminals	- too expensive, enough other sources	+ increasing demand and new investments	+ ? uncertain because of costs but willingness to substitute	- too expensive in weak economy
4. establish priorities on energy saving	++ summary	+ summary	++ summary	+ summary
a. household consumption savings	++ hot issue, saving money	0 people don't care	++ ecological conciseness; saving reasons	+ reduction of costs
b. savings in building blocks & service centers	++ official saving policies	0 installation of new technologies, but no cost reasons	++ ecological conciseness very important	+ cost reduction , also with new technologies
c. energy audits	++ saving and competition reasons	+ cost cutting measures due to high consumption	++ environmental policies, advantages by labels	+ modern energy management, labels
d. taxation and subsidies	++ saving policies, EU regulations	+ new income for governments, no subsidies	+ taxes on heavy energy use, subsidies for new technologies	+ / ++ national regulations
5. introduction of H₂ technology	+ / -	+ / -	+ / -	-
a. public transport (H₂ busses)	no investments in public transport, but good private market	no interest in public transport, but big private investments	alternative to reduce environmental impact	because of economy, no H2 technique implementation
b. cars (hybrid technique)				
6. extraction of hydrocarbons in the WSR	+ business as usual	++ high demand	+ / - emphasis on renewables and savings	++ pressure to stick to own resources
facilitating issues:				
reliable spatial plans for off-shore wind parks; policies and plans for: IPP support; cooperation in supply and grid access;	++ EU is driver for sound planning and new policies	+ high growth demands better planning, market liberalization	+ planning for minimizing impacts, market liberalization	- economic priorities give responsibilities to companies

Annex 5:**Results of the discussion about strategy, obstacles, recommendations and projects****THE VISION**

The vision of the energy sector includes the following issues:

- Saving energy of more than 20 % of the total consumption within 20 years
- Increase of the energy efficiency (transformation, processing)
- Preferred use of renewables and gas as primary energy sources
- Securing of energy supply for the society
- Power generation and exploitation of energy resources in the WSR to be in harmony with the resilience of the sensitive ecosystem
- WSR as demonstration area for sustainable energy use

THE STRATEGY**Proposed strategy elements of the energy sector to be tested concerning sustainability:**

The strategy elements have been further discussed in order to figure out some appropriate projects or measures for strategy implementation, to identify obstacles which currently hamper the strategy and to present recommendations to achieve the aims of the energy sector.

In order to work towards the Vision, the strategy of the energy sector contains the following elements:

1. Wind energy production in the WSR

Wind energy has a substantial share in electricity production in the WSR. It is still a growing market with a well-known technology. The locations of the future wind parks are considered off-shore which requires integrated planning and installation of various facilities on- and off-shore.

projects/measures:

- wind energy should be further used in the WSR as an alternative source
- single turbines and small wind parks should be removed
- concentration of wind turbines at some areas to minimize space use on-shore (up to 1% of a county in SH)
- integrated planning for off-shore sites (EEZ) and stimulation of applications

impacts and obstacles:

- in Germany, it is planned to install 40,000 MW capacity of wind energy generation, which is a third of the total existing electricity production capacity (110.000 MW). The needed facilities have big impacts on the environment. (facilities needed: converters, 1,000 are in discussion; power cables, each 200 MW for AC and 1,000 MW for DC)
- coastal areas have to pay higher prices for wind generated energy, subsidies for wind energy have to be regularly distributed to all consumers
- off-shore wind parks constitute risks with regard to shipping safety
- there is not enough space for near-shore wind parks, and off-shore sites might be too far for energy transport
- there is no available storage capacity for wind generated electricity

recommendations:

- the TG Energy recommends to implement wind parks outside the 12sm zone and not near-shore as is still practice in Lower Saxony
- subsidies for wind energy have to be regularly distributed to all consumers.
- for safety reasons, a risk assessment due to off-shore wind parks has to be undertaken; an insurance must be compulsory for the wind park operators
- it is recommended to initiate pilot projects to collect experience due to far away off-shore sites.

2. Solar energy and biomass as renewable energy production

The main recent elements of solar energy are collectors for heating water. Solar cells for electricity generation is an available technology but still rather expensive and not very efficient. Big technology breakthroughs are expected.

The technology of using biomass for energy supply is available however on an old standard, but new plants could contribute to minimizing the amount of organic waste and reducing N₂ emissions in the agricultural sector.

projects/measures:

- new programs are needed to promote and support the use of solar energy (also financial subsidies are still needed)
- installation of solar energy facilities in tourist areas and for summer houses, to produce e.g. hot water
- initiation of pilot projects by installing solar cells for remote locations

impacts and obstacles:

- only large scale use of solar energy will visibly contribute to an alternative energy market, this hampers new initiatives
- low efficiency of solar cells as well as the high prices of the generated electricity hinder the installation
- the little knowledge of possibilities and advantages of using organic waste leaves this energy source unexploited

recommendations:

- solar energy is a good alternative energy source, it has to be strongly promoted and supported.
- the challenge of using biomass, particularly organic waste, should be taken seriously by the government and new guidelines should be implemented

3. Extended development of combined heat and power systems (CHP)

CHP, also known as cogeneration, is an efficient, clean, and reliable approach to generating power and thermal energy from a single fuel source. By recycling waste heat, CHP systems achieve typical effective electric efficiencies of 50% to 70% — a significant improvement over the average 33% efficiency of conventional fossil-fueled power plants.

projects/measures:

- the counties should initiate decentralized energy supply to also use heat where it is needed like in hotels, pools, glass houses
(e.g. coal based CHP systems are running with an efficiency of 75%)

impacts and obstacles:

- the production of only electricity by CHP is too expensive and cannot compete with other production lines

recommendation:

- the TG Energy recommends that more awareness for CHP should be risen to implement efficient energy generation systems

4. Construction of LNG terminals

Liquefied natural gas (LNG) was seen for many years as little more than a way of moving gas to markets where pipelines are not feasible. Now it is seen by the gas industry as a potential of meeting the increasing gas needs of a global world. In terms of market outlook, Europe is expected to be a significant growth market. Expected gas supply gaps in the USA and Europe, and reducing LNG costs, could make LNG an attractive prospect for the growing energy demand.

projects/measures

- LNG terminals have so far been constructed outside the WSR, e.g. in the UK, Italy, Spain and France, which underlines the growing market share. A study for future requirements of the WSR should be undertaken

impacts and obstacles:

- LNG terminals constitute a risk for men
- the need for huge industrial areas and deep water ways could lead to impacts on the environment

recommendations:

- an EIA as well as a risk assessment have to be carried out for the installation of LNG terminals
- it is recommended that, before planning LNG terminals in the WSR, a cooperation with other areas like Rotterdam should be taken into account
- if LNG terminals in the WSR are necessary and considered economically feasible to secure the energy supply in the future, the installation should concentrate on one location to minimize the impacts.

5. Extraction of hydrocarbons in WSR

In the WSR, there are hydrocarbon resources which are considered exploitable within the next 20 – 30 years. In the Netherlands, the Wadden Sea gas deposit is about 35 billion m³, which corresponds with the Dutch consumption of one year. The drilling for German Wadden Sea oil (Mittelplate) has a share of about 2% of the total oil supply in Germany, a small part but a contribution to the strategy of getting more independent from imports.

projects/measures:

impacts and obstacles:

- possible impacts on the environment with regard to gas exploitation in the Wadden Sea, like the subsidence of the area above the gas fields (suggested 10cm within 20 years) causes resistance to exploitations in sensitive areas
- there are still risks of polluting the Wadden Sea ecosystem by hydrocarbons

recommendations:

- the oil and gas drilling should be carried out from on-shore whenever technically possible but without impacts on the environment
- it is recommended to use the existing facilities and infrastructure in the near future (10 years), to avoid severe economical disadvantages
- the exploitation of oil and gas in the sensitive Wadden Sea requires the highest technological standard and best environmental practice. This knowledge is a benefit which can be used in other areas for a sustainable hydrocarbon supply

6. Implementation of policies for energy saving and increase of efficiency

Energy savings includes:

- Energy savings for consumers with an emphasis on a reduction of more than 20 % in the total private consumption
- Energy savings in building blocks and service centers
- Energy audits, benchmarks, labels (for industry) contribute to savings
- Taxation & subsidies and simplified regulations are also part of saving policies

projects/measures:

- a campaign could be started to inform the public about possibilities in energy saving
- labels for low energy use in production and processing should be awarded
- more eco-team programs (cooperation in the neighborhood) should be initiated to save energy
- decentralized energy management systems should be implemented. This includes e.g. different prices for industry and households during day and night
- the WSR is a region with high natural and cultural values and vulnerable to climate change. Therefore, a Wadden Sea region wide program should be initiated to promote renewable energy and energy saving systems in order to maximize demonstration value in tourism areas. (pioneer role of WSR)

impacts and obstacles:

recommendations:

- it is recommended to pass policies due to higher taxation of heavy energy use and to support energy saving
- the TG Energy recommends that initiatives should be taken which aim at a changing behavior in consuming energy.

Annex 6:**Sustainability testing of strategies of the energy sector**

Parameters	What is Sustainability?	Indicators	Wind energy	Solar energy	CHP	LNG	Hydro-carbons	Saving
Safety	Safe living conditions and economic development by a sound coastal protection	dyke standards shipping	-	0	0	-	0/-	0
Social Dimension								
Education, research & development	Keeping the young generation in the region. Perspectives for young people	% young people; Education facilities	+	++	+	+	+	+
Employment	Safe working environment. High-quality and diversity of employment	- quality workplaces - Working hours	++/+	++	+	+	+	0
Recreation/ Housing/ attractions for citizens	Availability of social facilities, good spatial planning structure with regard to housing, cultural elements and leisure requirements		0	+	+	0	0	+
Local engagement	Local citizens are engaged and participate in local activities. Use of local knowledge		(+)	++	+	0	(+)	+
Regional identity	Feeling proud of being from Wadden Sea; production in the area; feeling home;	- Successors - Wadden Sea Labeling - Support for sector activities	+/-	+	+/-	0	0	+
Social institutions in rural areas	Availability and accessibility of school, hospitals, commercial institutions (banks, shops etc.) in less dense area		0	0	0	0	0	0

Parameters	What is Sustainability?	Indicators	Wind energy	Solar energy	CHP	LNG	Hydro-carbons	Saving
Economic Dimension								
Economic resilience Maintain and develop economically viable and region related activities; natural opportunities and qualities of the region								
	Economic activities rooted in the region	% employment in region	++	+	+	+	++	+
	Complete chain of activities	% processing in region	++	+	+	+	+/**	0
	Wind energy, regenerative energy production		++	++	0	-	0	+
	Energy efficiency and reliability		++/+	+/-	++	+	+/**	++
	Responsible entrepreneurs/ - innovation - companies, profit - employees, jobs	?	++	++	+	+/**	++	+
	Simplification of laws and regulations		0	0	0	0	0	+
Tourism	New tourism enterprises		0	0	0		0	0
	Quality tourism		- near-shore	(+)	0	0	-	0
Infrastructure	Optimal accessibility for production and transport		(+)	(+)	+	0	+	0
Sea traffic			-	0	0	-	0	0

Parameters	What is Sustainability?	Indicators	Wind energy	Solar energy	CHP	LNG	Hydro-carbons	Saving
Ecologic Dimension								
Darkness and silence	No unnecessary lights and noises in production and harbor activities		0 off-shore - near-shore	+	+	-	0/-	++
Biodiversity	Maintain natural biodiversity	See Ecological Targets	+/-	0	0	0	0/-	0
Contamination	Avoidance of pollution	Quality of air, water	0	+	+	+	0/-	++
Emissions of polluting substances	Decrease of emissions	Quality of air, water	+	++	+	+	0/-	++
Regulation	Implementation of national and international regulations for protection		0	0	0	0	0	0
	Nature and environmental management		0	0	0	0	0	0
Wadden Sea	Compliance with Guiding Principle trilateral WS co-operation	Ecological Targets Landscape Targets	-	+	+	-	0/-	+
Safety standards	Protection of the landscape and nature reserves against hazards		-	+	+	?	0/-	+
BEP	All activities according to Best Environmental Practice	-	+	+	+	+	+	++
Global responsibility			+	++	+	+	+/0	++