

ALTERNATIVE FUTURE SCENARIOS FOR BLUE ECONOMIES 1/4

MARINE ENERGY SECTOR

In the Paris climate agreement governments agreed to limit the increase of global temperature to 1.5°C. This requires substantial increase in production of renewable energy also in offshore areas.

In the sea areas of Finland and Estonia production of renewable energy is only taking the first steps. The experts expect growth for renewable energy sector, in particular for solar and wind energy.

SUSTAINABILITY ABOVE ALL

Strong environmental policies and legislation have led to decarbonisation. Smart, distributed energy production; renewable energy sources are used. Saving of energy; optimization of energy use. Innovative cleantech-based energy production.

UNLIMITED GROWTH

Economic growth is based on the use of traditional fossil and nuclear energy. Heavy industrial production maintains centralized energy production, current and old technologies are used. Weak environmental legislation.

SUSTAINABILITY DILEMMA

New and old energy production exist side by side, decarbonisation has not succeeded. Aim to self-sufficiency in energy production. Slightly modernized technologies used.

VIRTUAL REALITY

Extensively digitalised society: need to use natural resources changes because of changing human behaviour. Enormously increasing need for energy. Major breakthrough in smart grids has been reached.

The attitudes of all citizens and political decision makers will change remarkably. Decisions will be based on scientific knowledge. Strong environmental policy and legislation will be introduced: new stricter targets and environmental taxes. New innovations for saving energy.

No commitment to promote sustainability via international agreements or EU regulations. Because of fast economic growth, existing energy infrastructure will be used. In Finland, current investments into nuclear power plants will bind for decades and hinder the development of renewable energy production.

Political budget-support and financial systems are too interlinked, corrupted, and there is no interest in change. Weak development of global economy will affect development. The political situation in neighboring area leads to highlighting energy self-sufficiency, slowing down development of alternate production and its promotion.

Strong governmental support for digitalisation and virtual solutions leads to further digitalisation and greater need for energy. Internet of Things monitors energy consumption in every device and place. Later a fully digitalized future means a decrease in energy consumption, due to decrease in mobility. Smart, decentralized systems, grids and pipelines will be developed. Support for rural areas and expanded opportunities for distant working will increase. People consume much less.

Terrorism

Nuclear disaster

BLACK SWANS

= Sudden developments, which may change the future development into a different direction.

Crisis that does not result in total collapse may lead to "environmental awakening"

Major oil accidents

Major collapses; major crisis

TOP DRIVERS FOR ENERGY SECTOR

- Cleantech innovations for energy
- Main energy options supported by energy and environmental policies
 - Attitudes
- Environmental regulations and legal practices
- Conditions and trends of global economy and globalization

WEAK SIGNALS

= Even minor developments which may strengthen and lead to a certain future scenario.

Enlargement of areas with nature conservation restrictions