Energie-Strategie

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1 Inleiding

Energy:

- The physical property that allows to quanity the change of the state (set of variables) of a system:
  - Modification of temperature
  - Modification of shape
  - Modification of chemical composition
  - Modification of the position in a magnetic, electric or gravitational field
  - Change in atomic composition
  - Modification of number of photons
- the QUANTITATIVE PROPERTY that must be transferred to a body or physical SYSTEM to perform work on the body, or to heat it
- $\rightarrow$ Energy quantifies the transformation of the environment

Strategy: a general PLAN to achieve one or more long-term or overall GOALS under conditions of uncertainty.

Energy strategy is embedded in:

- General business strategy:
  - Competitiveness
  - Sustainability

Energy strategy is:

- An early step in Energy management (as part of environmental management)
- PDCA : Planning phase in the energy management system

The business strategy: (10 examples of great business strategy)

1. Cross-sell more products

2. Most innovative product or service
3. Grow sales from new products
4. Improve customer service
5. Cornering a young market
6. Product differentiation
7. Pricing strategies
8. Technological advantage
9. Improve customer retention
10. Sustainability

An energy policy defines:

- ENERGY GOALS in line with the business strategy
- The purpose of the energy policy statement is to document the organization's commitment and overall approach to energy at a high level. It does not need to have any detail on how the organization will manage its energy.
  - What to do = Policy (general rules, goals and objectives)
  - How to do it = Management (actions and decisions)
- It needs to provide guidelines on how the organization will manage its energy

An energy strategy refers to:

- The PLAN a company makes to implement its energy policy
- The starting point of Energy management (actions and decisions)

The policy requires the following:

- It needs to be appropriate to the nature and scale of the organizations energy use

- It needs to be reviewed and updated regularly (e.g. annually) to ensure that it remains relevant. This review will usually be part of the regular management review of the overall EnMS.

- It needs to be reviewed and updated regularly (e.g. annually) to ensure that it remains relevant. This review will usually be part of the regular management review of the overall EnMS.

  Care must be taken that the policy is not just a symbol of management commitment without real commitment being in place to support it.

The policy statement needs to include reference to the following:

- Commitment to continual improvement of energy performance through the development and achievement of relevant objectives and targets.
- Commitment to provide the necessary resources to achieve its energy objectives and targets.
- Commitment to develop the necessary measures to demonstrate performance improvement.
- Commitment to comply with all legal and other requirements that apply to its energy using activities.
- Support for the purchase of energy efficient products and services where economically feasible.

  The policy needs to be signed by top management to demonstrate its commitment to the EnMS.

  Many organizations may decide to integrate the energy policy into their environmental policy. This can be a good idea as there are often significant overlaps. The policy must still include all the elements described in this section to be effective.

1.1 Define the energy policy in terms of:

- Cost management
- Environmental management

- Security of supply
- Legal obligations and other regulation
- Technology & innovation
- PR & communication

1.2 ENergy policy of an organization - Energy strategy pillars:

- Energy efficiency:
  - Energy review (audit)
  - Technology (energy prestaties van technology)
  - Monitoring & targeting (hoe volg ik de energy prestaties op)
  - Operational control (alles wat te maken heeft met de human factor)
- Sourcing:
  - Onsite generation (zelf uw energie opwekken)
  - Energy sharing/ energy communities (met buren energy opwekking doen)
  - off-site generation (niet bij u genereren)
  - Network power, gas, heat
  - Other fuels
  - Certificats: EUA, GOO, GSC/WKC
- GHG emissions:
  - Energy related emissions (scope 1 & 2)
  - Energy for mobility
  - Green washing
  - EU-ETS
  - Electrification

- Flexibility:
  - Behind the meter flex (op de site zelf zien wat je kan doen)
  - Front of the meter flex (bvb als je batterij systeem hebt aggregeren aan ander die dat kan gebruiken)
  - Energy storage
- GHG Green House Gas(es)
- EUA European (emission) Allowance(s)
- GSC Groene Energie Certificaten
- WKC Warmte Kracht Koppeling Certificaten

1.3 Energy strategy: Planning phase in the energy management system:

An energy strategy refers to the PLAN that a company makes to implement its energy policy. The actions and decisions re. energy need to be imbedded in an Energy Management System:

- Cf : Ad Hoc actions & decisions vs. a Systematic approach
- Management system: set of interrelated or interacting elements of an organization to establish policies and objectives and processes to achieve those objectives
- Energy management system (EnMS): management system to establish an energy policy, objectives, energy targets, action plans and process(es) to achieve the objectives and energy targets

Energy performance indicators zijn het klein broertje van de KPI's (is voornamelijk gefocused op continu verbeteren van energy prestaties)

1.4 Het doel: energy performance:

verschil energie gebruik en energie verbruik is het verlies. energie gebruik is uw nuttig bruikbaar energie en energie verbruik is uw totaal verbruikte energie.

Wat zijn goeie energie prestaties?

- Not use more energy than strictly required
- Shift towards renewable energy sources
- Produce goods at lowest energy cost

Hoe krijg je goeie energie energie prestaties?

- technology:
  - innovatie:
    - Process improvements
    - Best available technology
    - Renewable energy sources
    - Onsite generation
    - Upgrades & retrofits
  - Energy improvement measures:
    - Add-ons, Replace and Maintain
    - Compressors with VSD
    - Insulation
    - Heat recovery
    - . . .

- Operational control:
  - Settings of machines
  - Process controls
  - Planning
  - Losses detection

- Monitoring

1.4.1 Why is monitoring important?

Is belangrijk om uw werken verder te kunnen zetten in de tijd

- To be aware of energy performance
- Show the effect of investments in new technology, retrofits, upgrades..
- Demonstrate the effect of EIMs, maintenance and repairs
- To keep energy use under control (no losses)

1.4.2 Hoe maak je uw energie prestatie meetbaar?:

Vergelijk de kost en verbruik met uw verwachte waarde.

- Compare actual usage to ENERGY BASELINE
- Track performance indicators (EnPI) in areas of SEU MONITORING & TARGETTING

1.4.2.1 Monitoring & targeting (M &T) Monitoring and targeting is the foundation of energy management activities, allowing to:

- Alert users timely to instances of exceptional consumption of energy
- Identify new potential energy improvement measures (EIM)
- Provide feedback for:
  - staff awareness
  - budget setting
  - benchmarking (compare performance against best practice)

2 Week 4:

het eerste domein is energy efficiency, het tweede domein is sourcing en het derde domein die nu redelijk aan het opkomen is is het ecologische aspect. (denk aan de scope's) en als laatste domein flexibiliteit.

2.1 Planning:

Je begint eerst met de vragen naar wat het verbruik is/kosten zijn aan de hand van de facturen,. . . Je zet dit dan in een excel etc. maand per maand. Dan kijken we naar waar de grote verbruikers zitten. Als we niet direct kunnen zien wat de grootste verbruiker is kijken we naar het vermogen van alle verbruikers en hoelang ze draaien per dag.

3 Week 5:

Als je iets nieuws aankoopt/installeerd dan moet je dat direct betalen maar die terugverdientijd etc. kan anders zijn (IRR). Technische haalbaarheid is ook belangrijk voor de economische haalbaarheid.

3.1 Energy performance monitoring

Om efficient energie performantie bij te houden en te managen van de faciliteiten,systemen, processen en equipment moeten organisaties weten hoe/wat energie is en hoeveel er verbruikt wordt. Een (EnPI) is een waarde of maat dat resultaten kwantificeerd gerelateerd aan energy efficientie, gebruik en consumptie in faciliteiten,systemen,processen en equipment.

Organisaties gebruiken energy performantie indicatoren (EnPI's) als een maat voor hun eigen performantie.
De energie baseline (EnB) is een referentie dat characteriseerd en kwantificeerd een organisaties energie performantie tijdens een gespecifieerde tijds periode. De EnB laat organisaties toe om aanpassingen te zien in energie performantie tussen geselecteerde periodes.
Kan op examen gevraagd worden: 2 hoofredenen waarom specifiek gebruik zelden een goeden reden is voor energie : als er geen productie is zal het verbruik 0 zijn (wat zelden voorkomt). En de 2de reden is omdat er ook andere variabelen kunnen meespelen in het productie volume. (bvb er kunnen weersfenomenen bepalend zijn).