

## Royal Netherlands Army



Do not bother me with new ideas
I have a war to fight

# Smart Grids in an operational setting

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## Introduction

The aim of this briefing:

To show there is a good opportunity to use smart and micro grids in compounds in a operational setting.



## **Operational Energy Strategy**

- In 2030 50% of the Energy on Camps is renewable.
- In 2050 Camps should be self sufficient for energy.



# "Current situation"

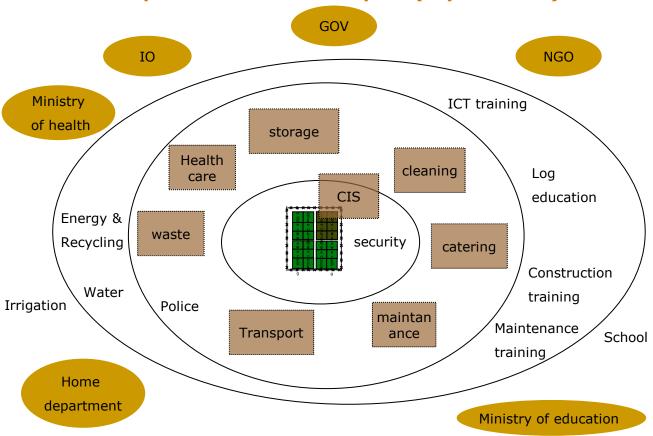








## Compound concept (system)



#### **'What'**

- Different functions
- Different demand
- Different sources

#### 'How'

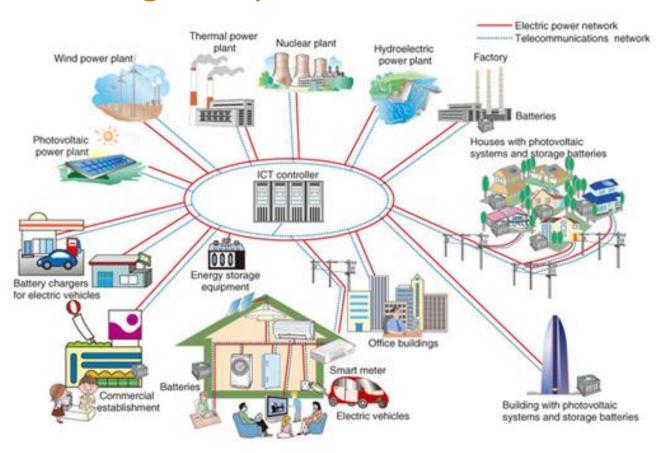
Smart/micro grid

#### **`Effect'**

- Energy security
- Energy reduction
- Local effects



## Smart/micro grid lay out

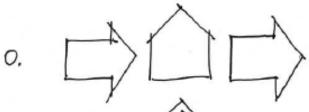








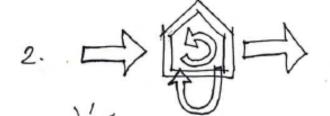
## The system outside the grid



0 standard building



- 1 reduce the demand
  - passive, smart & bioclimatic design



- 2 reuse waste flows
  - waste heat, waste water, waste material
  - in closed or connected cycles

3a solve the resuming demand sustainably 3b waste = food

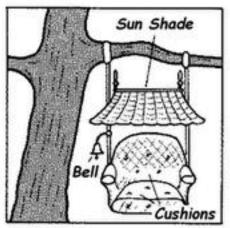


## **Opportunities**

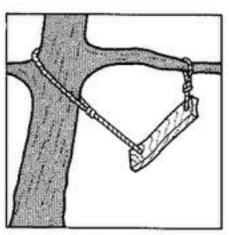
- Smart grids are not the silver bullet, it's a part of the system.
- Military camps are built and designed from scratch, so it is easy to incorporate smart and micro grids.
- Share knowledge, equipment and personnel within, governments (Defense), companies, Universities, Ios, NGOs etc.
- There is an opportunity to cooperate in our Field Lab sustainable energy in Ede



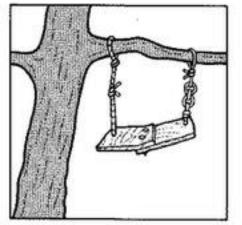
## Royal Netherlands Army



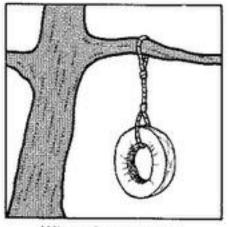
What sales promised



Pre-release version



General release version



What the customer actually wanted

# Questions

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