**Requirements**

**PREPARED FOR**

Gertjan Schouten

Nico Kuijpers

Frank Coenen

**PREPARED BY**

Vincent Andersen

Nick Krijgsman

Faruk Aydin

Maarten Blömer

Jursley Gonzalez

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# 

# Non-functional Requirements

## Scalability

* System can be scaled up for national use.

## Security

* Personal data can under no circumstances be available to others than the custom himself AND employees who need access to this information. Compliant with GDPR ruling.

## 

## Availability

* System must be running 24/7.
* System has 75% maintainability for 24 hours.

## 

## Performance

* System must return results in … ms under normal workloads.
  + Under heavy workload the system must return results in … ms.
* Monitoring tool to prove system is up 24/7
* Performance tests to prove the system can handle incoming electricity meters, power-and price fluctuations.

## 

## Transferability

* Demonstrate interoperability with systems from the other utility companies and the BRP

# Functional requirements

## 

## Actors

* **CON**: Consumer
* **PRS**: Prosumer
* **PRD**: Producer
* **BRP**: TenneT (BRP)
* **UTL**: Utility Company (Stedin, Enexis, Liander, Enduris)
* **LSC**: Large scale consumer
* **ENS**: Energy sector (S63 + S64 groups NESW + Belgium)

## Domains

* **MAR**: Market
* **SIM**: Simulation
* **GRI**: Grid Status
* **EID**: Energy input and demand
* **ACC**: Account

## Example

As a [persona], I [want to], [so that].

## Backlog

|  |  |  |
| --- | --- | --- |
| # | Tag | UserStory |
|  | MAR\_BRP\_2 | As a BRP, I want to view the energy market prices periodically, so that I can buy energy to match my demand. |
|  | MAR\_BRP\_2.1 | As a BRP, I want to view the energy market prices periodically, so that I can sell energy to match my demand. |
|  | MAR\_CON\_1 | As a consumer, I want to be able to list my surplus energy on the market for a fair price, so that I can earn some money instead of wasting the energy. |
|  | MAR\_CON\_2 | As a consumer, I want to be able to search for energy on the market, so that I can buy energy to fill up my shortage. |
|  |  |  |
|  | SIM\_UTL\_1 | As a utility company, I want to view the simulation of energy demand, so that I can up and downscale the energy production to match it. |
|  | SIM\_BRP\_1 | As a BRP, I want to predict how much solar/wind energy is going to be produced, so that I can manage other producers to produce less energy. |
|  |  |  |
|  | GRI\_CON\_1 | As a consumer, I want to manage my energy usage, so that it’ll be clear where to scrimp energy from. |
|  | GRI\_PRD\_1 | As a producer, I want to be able to turn high voltage cables on and off, so I can regulate the energy generation. |
|  | GRI\_PRD\_2 | As a producer, I want to be notified when solar panels are turned on/off, so I can check their status and if they should be producing energy. |
|  | GRI\_PRD\_3 | As a producer, I want to be able to turn all solar panels in a solar park, so I can regulate the energy generation. |
|  | GRI\_BRP\_1 | As a BRP, I want to have calculations of high voltage cables, so that I can view the voltage on them. |
|  | GRI\_UTL\_1 | As a utility company, I want to be able to read energy meters off different types of energy sources, so I can regulate the output and demand of energy. |
|  | GRI\_UTL\_2 | As a utility company, I want an overview of reparation services, so I can take offline systems in my prediction of energy generation. |
|  | GRI\_UTL\_3 | As a utility company, I want an overview of maintenance services, so I can take offline systems in my prediction of energy generation. |
|  |  |  |
|  | EID\_PRD\_1 | As a producer, I want to view information about the energy input and demand, so that I can up and downscale energy production accordingly. |
|  |  |  |
|  | ACC\_CON\_1 | As a consumer, I want to have insights on my energy usage, so that I know how much energy I used. This helps me to understand my energy bill. |
|  | ACC\_CON\_2 | As a consumer, I want to be able to delete all my personal information, so that my privacy can be protected. |
|  | ACC\_CON\_3 | As a consumer, I want to be able to change my password, so that I can remember it more easily or I can change it for security reasons. |
|  | ACC\_CON\_4 | As a consumer, I want to change my email address, so that I can receive important information on another email address. |
|  | ACC\_UTL\_1 | As a utility company, I want to add a new consumer to the grid, so that when new users move and use my utilities they can have an account. |
|  | ACC\_UTL\_2 | As a utility company, I want to set accounts inactive, so that when a consumer stops using my utilities they are removed from my system. |
|  | ACC\_PRS\_1 | As a prosumer, I want to have information on my production, so that I can see how much energy I have produced and how much money I have saved. |
|  | ACC\_PRS\_2 | As a prosumer, I want to have information on my consumption, so that I understand my energy bill and I can adjust my energy consumption. |
|  |  |  |