

# **Status report on the alignment of the Harmonised Gas Role Model (HGRM) and the Harmonised Electricity Market Role Model (HEMRM)**

Since April 2021 representatives of both the European gas sector and the European electricity sector involved in the development and maintenance of the respective role models (HEMRM and HGRM) have come together in an effort to align both role models. This document contains the first interim report of the status of the work so far.

Version: 1.1

Revision: A

Date: November 2022

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## 1 Management Abstract

Recently, the European Commission set up a regulatory framework that is designed to create awareness of sector couplings and highlight the similarities between the sectors for an easier implementation. It was recognized by the regulation and the sectors that a common understanding of actors in the market is needed.

This report shows the status for the project, including a brief introduction to role models, the alignment procedure followed in the project and the first draft mapping between the roles defined in the HGRM (Harmonised Gas Role Model), see [2] and HEMRM (Harmonised Electricity Market Role Model), see [1].


The main part of the report is the mapping of roles between the HGRM and HEMRM, which is shown in a UML class diagram where «mapsTo», «includes» or «aligned» dependencies shows the level of similarities between the mapped roles.

The main reasons for running the project are:

- Present similarities between both role models.
- Help actors in the sectors to understand the complexity of the sectors and what is already common between the two sectors.
- Simplification and possible enabling of cost savings for IT-systems serving customers in both electricity and gas sectors.
- Alignment of roles between the sectors may simplify future interlinked optimisations.
- It is expected that aligned gas and electricity market role definitions will support the directives 2019/944 (electricity), see [3], and 2009/73/EC (gas), see [4].

## 2 Notations used in this document

The following notation and stereotypes are used in the artefacts shown in this document:

Actor	An actor represents a party that participates in a business transaction. Within a given business transaction an actor assumes a specific role or a set of roles. An actor is a composition of one or more roles and as such does not appear in the model.
«Harmonised Role»	The stereotype «Harmonised Role» represents the external intended behaviour of an actor, using a common name that are prevalent within the European energy market information exchange. Actors, e.g. Distribution System Operators, Transmission System Operators, Traders and Energy Suppliers carry out their activities by performing roles. A role cannot be split over several actors.
«mapsTo»	The stereotype «mapsTo» is used when the names of two or more roles in the HGRM and the HEMRM are different, but the roles have the same or almost the same definition.
«includes»	The stereotype «includes» is used when the definition of a role in the HGRM or the HEMRM covers the combination of the definitions in two or more roles in the other role model.
«aligned»	The stereotype «aligned» is used when both the name and the definition are aligned between two roles in both role models.
	Roles (stickman) with green coloured heads are used when both name and definition is aligned between HGRM and HEMRM.

## 3 Introduction

### 3.1 What do we expect to achieve?

It is expected to be able to align most of the roles and probably possible to map some roles that are defined differently but fulfil similar functions or have a different degree of fragmentation *i.e.* one role in one of the role models fulfils the same requirements as a set of roles in the other role model. However, it should be expected that some roles and domains will remain unaligned.

Not all roles will be used in both markets, among others because of physical differences in gas and electricity and because of different market models. Therefore, the result of the alignment effort will not be *one* common set of roles and domains covering both the gas requirements and the electricity requirements, but rather *three* sets; one common part, one part for gas and one part for electricity.

But it is not yet known how these results will be best organised in terms of role model documentation.

### 3.2 What is a business sector Role Model?

*From HEMRM:*

The Harmonised electricity market Role Model (HEMRM) has been developed in order to facilitate the dialogue between the market participants from different countries through the designation of a common name for each role and object that are prevalent within the European electricity market information exchange. It focuses essentially to enable a common terminology for IT supported information exchange. The HEMRM has been developed by ENTSO-E, EFET and ebIX®.

A role model of this nature shall be the formal means of identifying roles and objects that are used in information exchange. It is important to stress that it is not a model of the electricity market but rather a model of the roles related to information exchange.

*From HGRM:*

The Harmonised Gas Role Model has been developed to represent actions between different market participants in the gas industry. The main focus of the document is on information exchange between market participants (excluding legal matters). The aim of the document, however, is to provide a common terminology for the roles that are used among most European countries.

The Harmonised Gas Role Model is only applicable for the Gas Market and not for other Energy segments. It has been developed by EASEE-gas with input from other associations.

### 3.3 What are the reasons to align?

Since 2001 for electricity and since 2015 for gas there have been two role model documents, both sectors went their own way of creating a role model document.

A common understanding will facilitate harmonization if both sectors manage to discuss the opportunities and agree to get as close to each other as possible. The discussions would enable both sectors to understand the focus and the complexity of the other sector whilst taking existing similarities into consideration.

The outcome of these discussions should result in a harmonization report to show what results were achieved and show where (maybe) it was not possible to harmonize. This common understanding would facilitate the implementation of roles and processes in systems created by software vendors. Especially in retail markets where market roles act in both sectors, a common understanding will help market parties and vendors developing optimised and cheaper IT-systems.

It is expected that the outcome of the harmonization discussions will support the directives 2019/944 (for electricity) and 2009/73/EC (for gas).

### 3.4 What is the alignment procedure followed in this project?

Step 1: List all roles and their definitions.

Step 2: Find and compare similar roles.

Step 3: Categorise these roles based on likelihood alignment.

- a) Likely easy to align.
- b) Probably not so easy, but possible to align.
- c) Probably unlikely that alignment is possible, or alignment is dependent on external developments.
- d) Unlikely that alignment will be possible.

Step 4: Align the category a)-roles.

Step 5: Align the category b)-roles.

Step 6: Align the category c)-roles.

Step 7: Based on the result of the first alignment efforts, add links between gas roles and electricity roles with a categorization of the nature of these links, i.e. «mapsTo», «includes» and «aligned».

Step 8: Make harmonisation changes, e.g. update of role definitions in both HGRM and HEMRM.

Step 9: Report status of the alignment efforts so far.

## 4 Present status of the work done in this project

### 4.1 Roles mapped

The following diagram shows the roles that currently have been mapped between the HGRM and the HEMRM:

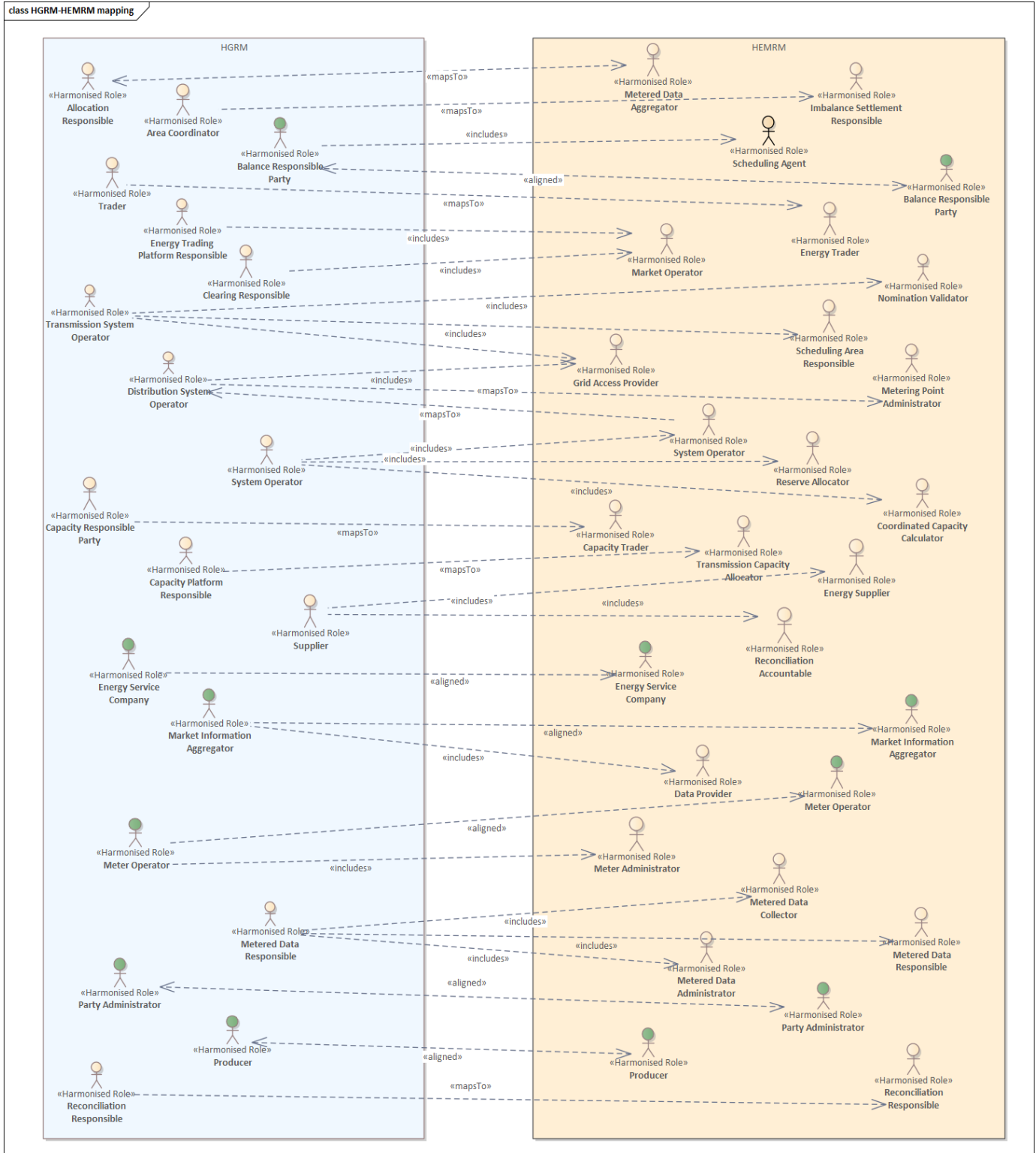


Figure 1 Mapped HGRM and HEMRM roles

### 4.2 Gas market roles not yet mapped

The following diagram shows the roles from the HGRM that are not mapped yet:

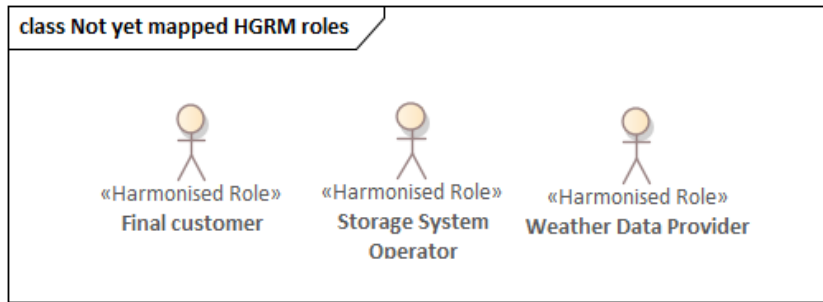


Figure 2 Gas market roles not yet mapped

### 4.3 Electricity market roles not yet mapped

The following diagram shows the roles from the HEMRM that are not mapped yet:

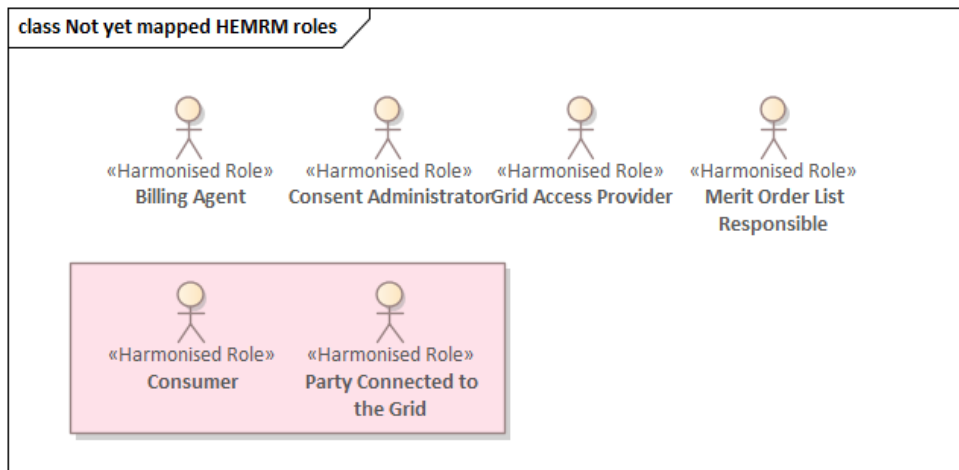


Figure 3 Electricity market roles not yet mapped

### 4.4 Gas market specific roles

The following diagram shows the roles that are specific for the gas sector:

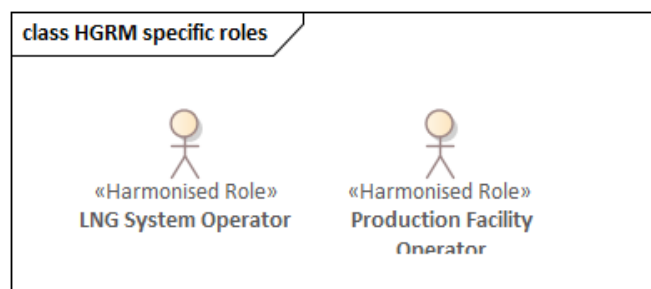


Figure 4 Gas market specific roles



### 4.5 Electricity market specific roles

The following diagram shows the roles that are specific for the electricity sector:

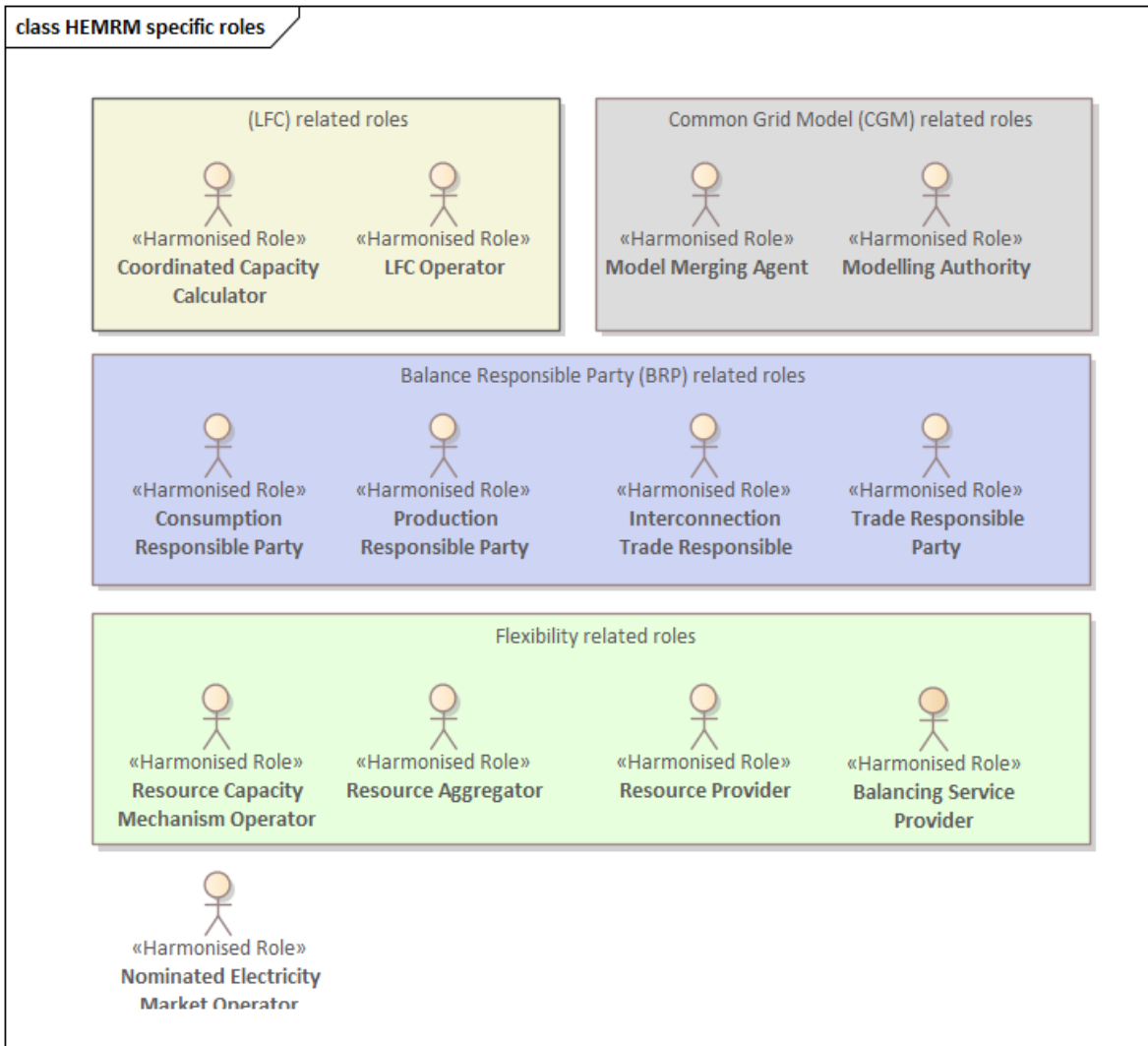


Figure 5 Electricity market (HEMRM) specific roles

## 5 Next steps

The next steps will be to continue aligning the roles not yet aligned, i.e. category b)- and category c)-roles. The outcome of the alignment process will be a final report. In the final report the result of our work and possible options for how this work influences the further developments and maintenance of HGRM and HEMRM will be presented.

## Appendix A Abbreviations used in the document

CGM	Common Grid Model.
EASEE-gas	European Association for the Streamlining of Energy Exchange – gas.
ebIX®	European forum for energy business Information eXchange.
EC	European Commission.
EFET	European Federation of Energy Traders.
ENTSO-E	European Network of Transmission System Operators for Electricity.
ENTSO-G	European Network of Transmission System Operators for Gas.
HEMRM	Harmonised Electricity Market Role Model.
HGRM	Harmonised Gas Role Model.
LFC	Load Frequency Control.
LNG	Liquid Natural Gas.
UML	Unified Modelling Language.

## Appendix B References

- [1] Harmonised Electricity Market Role Model (HEMRM), see [https://www.ebix.org/artikel/role\\_model](https://www.ebix.org/artikel/role_model).
- [2] Harmonised Gas Role Model, see <https://easee-gas.eu/gas-role-model-1>.
- [3] Directive (EU) 2019/944 on common rules for the internal market for electricity, see <https://eur-lex.europa.eu/legal-content/EN/LSU/?uri=CELEX:32019L0944>
- [4] Directive 2009/73/EC of the European parliament and of the council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC, see <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32009L0073>.