



SYSTEMS REFERENCE DELIVERABLE

**Distributed energy resource aggregation business -
Part 1: System architecture and service scenarios**

CONTENTS

FOREWORD.....	3
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions.....	6
4 System component	9
4.1 General	9
4.2 ERAB system	10
4.3 ERAB controller.....	11
4.4 Distributed energy resource.....	11
4.5 Controllable load	11
4.6 Metering device.....	12
5 Evaluation of the value of ERAB.....	12
5.1 Evaluation pattern of ERAB	12
5.2 Measurement point of ERAB value	12
5.2.1 General.....	12
5.2.2 PCC point measurement.....	12
5.2.3 DER point measurement.....	15
5.3 Evaluation standard of ERAB value	16
5.3.1 Evaluation standard applicable to lowering DRs	16
5.3.2 Evaluation standard applicable to demand-generating DRs	16
5.3.3 Evaluation time.....	17
5.3.4 Evaluation interval	17
Annex A (informative) Use cases of distributed energy resource aggregation business (ERAB).....	18
A.1 Business use case: incentive-based demand response (DR) for the peak management in distributed energy resource aggregation business (ERAB).....	18
A.1.1 UC63443-1-B001 – General	18
A.1.2 Description of the use case.....	18
A.1.3 Diagrams of use case.....	22
A.1.4 Technical details.....	23
A.1.5 Step by step analysis of use case.....	29
A.1.6 Information exchanged	38
A.1.7 Requirements (optional)	43
A.1.8 Custom information (optional)	44
A.2 Business use case: incentive-based demand response (DR) for frequency restoration reserve and replacement reserve in distributed energy resource aggregation business (ERAB)	44
A.2.1 UC63443-2-B002 – General	44
A.2.2 Description of the use case.....	44
A.2.3 Diagrams of use case.....	48
A.2.4 Technical details.....	49
A.2.5 Step by step analysis of use case.....	55
A.2.6 Information exchanged	65
A.2.7 Requirements (OPTIONAL).....	70
A.2.8 Custom information (optional)	70
Bibliography.....	71

Figure 1 – Position of ERAB system	5
Figure 2 – Outlook of ERAB on SGAM plane in IEC TR 63097:2017	10
Figure 3 – ERAB on the five-level architecture in IEC SRD 62913-2-3:2019.....	11
Figure 4 – Measurement at PCC	13
Figure 5 – DER point measurement.....	15
Figure 6 – Baseline.....	16
Figure 7 – Definitions of different time categories related to DRs.....	17
Figure A.1 – Four types of incentive-typed DRs in ERAB	20
Figure A.2 – Domain overview diagram in ERAB – 1	22
Figure A.3 – Domain overview diagram in ERAB – 2	22
Figure A.4 – Four types of incentive-typed DRs in ERAB	46
Figure A.5 – Domain overview diagram in ERAB – 1	48
Figure A.6 – Domain overview diagram in ERAB – 2	48
Table 1 – Evaluation patterns of ERAB	12
Table 2 – Available data item from a metering device at PCC.....	13
Table 3 – Available data item from a metering device at PCC (for a low voltage customer)	13
Table 4 – Available data item from a metering device at PCC (for a high voltage customer)	14
Table A.1 – Service menu examples for incentive-based DR.....	19
Table A.2 – Service menu examples for incentive-based DR.....	45

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Distributed energy resource aggregation business - Part 1: System architecture and service scenarios

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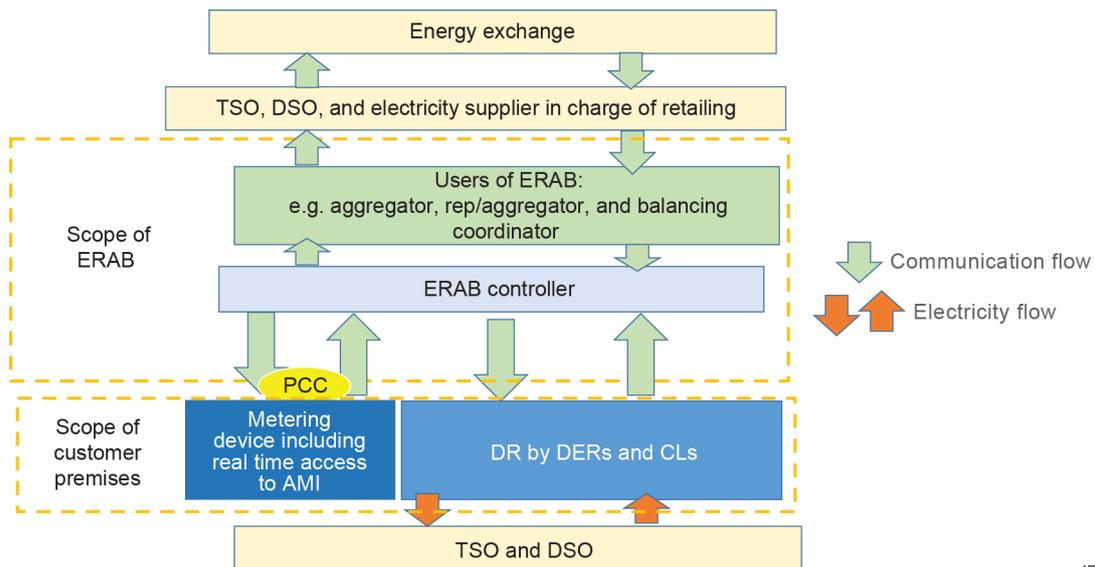
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- reconfirmed,
- withdrawn, or
- revised.

1 Scope

This part of IEC SRD 63443 covers the terms and definitions, system architecture, and service scenarios of distributed energy resource aggregation business (ERAB), whose definition is to restrain or elevate the power generation of distributed energy resources (DERs) and power demands of controllable loads (CLs) at customer premises in accordance with the performance measurement by the metering device at the point of common coupling (PCC), allowing real-time data access from customer premises and the request of the transmission service operator (TSO), distribution system operator (DSO), electricity supplier, and energy exchange, as illustrated in Figure 1.



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Figure 1 – Position of ERAB system

In conventional power systems, the balance between supply and demand is adjusted by the transmission service operator (TSO) and distribution system operator (DSO) controlling the power generation facilities on the supplier side, enforcing the same amounts of demand and supply at the same time on TSO and DSO. However, the widespread use of DERs and CLs with network access has enabled them to be configured as virtual systems on the demand-side. In addition, real-time data access to a metering device allows measurement of the performance of aggregating these devices using trustworthiness data. Similar to the drastic changes in the electricity system, the ERAB provides a new service scenario that contributes to the balance of supply and demand within the electricity system.

The ERAB coordinates the requests and reports from/to ERAB participants, such as the TSO, DSO, and electricity supplier, and manages the remote control of the DERs and CLs executed through the ERAB controller that provides site-specific DER management. The ERAB provides two types of services: "demand restraint" and "demand increase." The former model removes tight supply and demand by effectively shaving or shifting the peak demand. The latter model contributes to the effective use of energy by shifting the demand against the excessive power supply owing to the expansion of the introduction of renewable energy, as well as to the improvement of energy autonomy by aggregating the DERs and CLs with a power storage function.

2 Normative references

There are no normative references in this document.

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