



Self Consumption Of
Renewable Energy by
hybrid Storage systems

H2020 - EEB - 2017 - 766464 – SCORES

Self Consumption Of Renewable Energy by hybrid Storage systems



D5.3 Photographs of the CLC subsystem

	Name	Signature and date
Prepared by	Martin Mohana (TNO)	Approved
Checked by	Pavol Bodis (TNO)	Approved
Approved by	Coordinator Erwin Giling (on behalf of General Assembly)	Approved





Distribution list

External		XXX (partner short name)	
European Commission		Archive	1x

Change log

Issue	Date	Pages	Remark / changes	Page
1	7 April 2021	16	First issue	All

Table of contents

1	Background	3
2	References	3
2.1	Applicable Documents.....	3
2.2	Reference Documents.....	3
3	Terms, definitions and abbreviated terms	4
4	Pictures	4
4.1	Construction and Commissioning (FAT) at TNO (NL).....	4
4.2	Transportation Phase from TNO (NL) to AEE (AT)	14
4.3	Commissioning (SAT) at AEE (AT).....	16





1 Background

The SCORES project aim is to develop and demonstrate, in the field of building energy systems, new compact hybrid storage technologies that optimize supply, storage and demand of electricity and heat in residential buildings, increasing self-consumption of local renewable energy at the lowest cost. Combination and optimization of multi-energy generation, storage and consumption of local renewable energy (electricity and heat) brings new sources of flexibility to the grid and giving options for tradability and economic benefits, enabling reliable operation with a positive business case in Europe's building stock. SCORES optimizes self-consumption of renewable energy and defers investments in the energy grid.

This deliverable (D5.3) shows the construction of the CLC Emulator Demo Subsystem for the SCORES Demo A. The construction is based on the general requirements set out in RD-01, from which specific designs have been developed in RD-03 and further detailed in RD-04.

This document was compiled by TNO. This document has also been reviewed by the partners within the SCORES program before publication.

2 References

2.1 Applicable Documents

	Document	Reference	Issue
AD-01			
AD-02			
AD-03			

2.2 Reference Documents

	Document	Reference	Issue
RD-01	Requirements and specification of the SCORES system A and C	TNO-SCORES-RP-094-i1_D7.2	1
RD-02	Hardware of the system: photographs of the installed system	AEE-SCORES-RP-127_i1_D7.5	1
RD-03	Report summarizing the design specifications of the CLC subsystem	TNO-SCORES-RP-105_i1_D5.1	1
RD-04	Report on enhancements and optimizations of CLC subsystem	TNO-SCORES-RP-132-i1_D5.2_Report on CLC Enhancements	1





3 Terms, definitions and abbreviated terms

RP Report

4 Pictures

4.1 Construction and Commissioning (FAT) at TNO (NL)



Figure 1: Receipt of MRSU from KMG (DE).





Figure 2: Day 1 of construction.





Self Consumption Of
Renewable Energy by
hybrid Storage systems

Dissem. IV: Confidential



Figure 3: Day 3 of construction.





Self Consumption Of
Renewable Energy by
hybrid Storage systems

Dissem. IV: Confidential



Figure 4: Day 4 of construction.





Self Consumption Of
Renewable Energy by
hybrid Storage systems



Figure 5: Day 9 of construction. Note: CLC Emulator Demo Reactor was not yet received so the system was tested using a bypass instead.





Self Consumption Of
Renewable Energy by
hybrid Storage systems

Dissem. IV: Confidential



Figure 6: Day 30 of construction, receipt and installation of CLC Emulator Demo Reactor.





Figure 7: Connections prepared towards the SCORES DEMO A.





Figure 8: Flow meters and pumps between the CLC Emulator Demo Reactor and the MRSU.





Figure 9: CLC Emulator cartridge fitted with a representative copper mesh and electrical heaters.





Self Consumption Of
Renewable Energy by
hybrid Storage systems



Figure 10: CLC Emulator Demo Container in front of the TNO building.





4.2 Transportation Phase from TNO (NL) to AEE (AT)



Figure 11: Transportation to SCORES DEMO-A.





Self Consumption Of
Renewable Energy by
hybrid Storage systems



Figure 12: Receiving of the CLC Emulator Demo Container by AEE at SCORES DEMO A.





Self Consumption Of
Renewable Energy by
hybrid Storage systems



Figure 13: Placement of the CLC Emulator Demo Container to its final location at SCORES DEMO A.

4.3 Commissioning (SAT) at DEMO A

The commissioning of CLC Emulator Demo Subsystem at SCORE DEMO A is depicted and detailed further in RD-02.

