



# multi PACK

The MultiPACK Project's  
publicly available  
educational materials,  
data, and publications

-how to reach them?



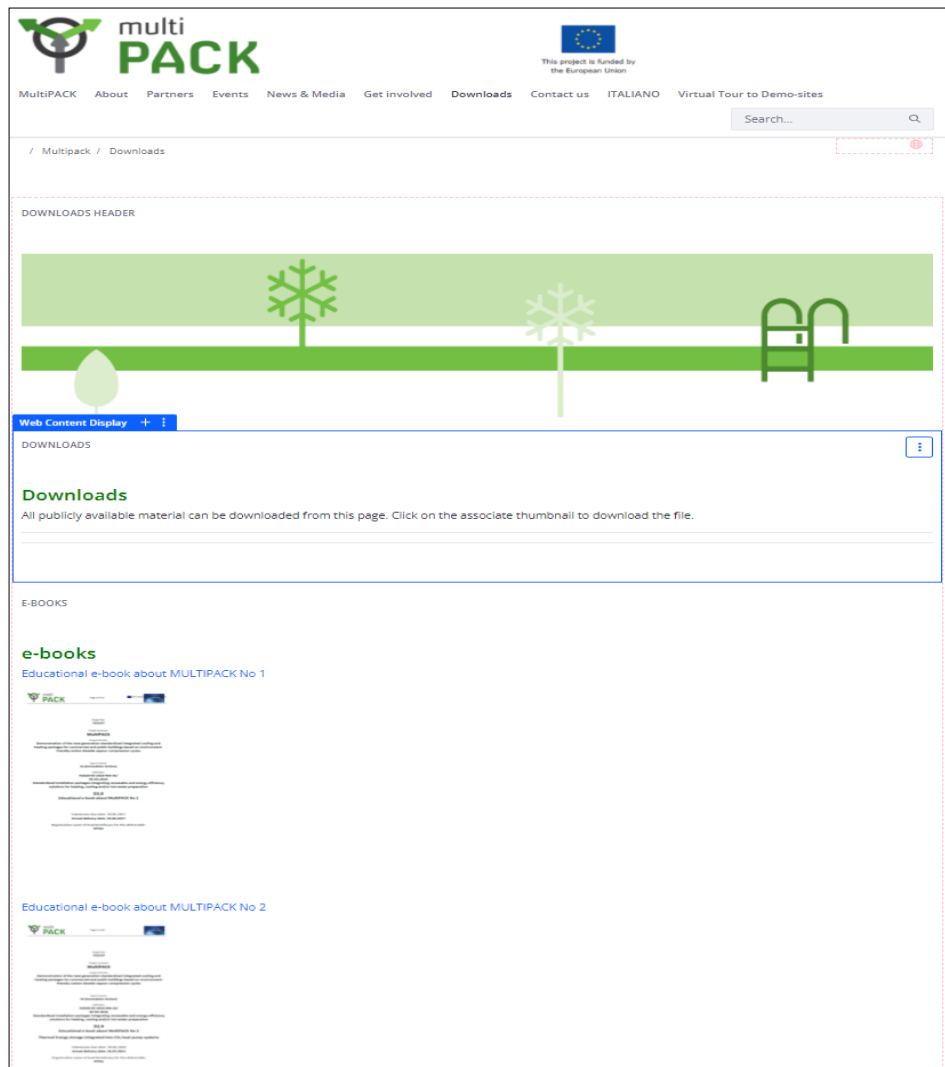
## Educational materials

The educational material are available on the MultiPACK project website under the “Download” section.

<https://www.ntnu.edu/multipack/downloads>

This section includes:

- e-books
- flyers
- e-newsletters



## Publications, presentations

The publications, recorded presentations are available on the project website under the "Virtual tour to Demo-sites" section.

<https://www.ntnu.edu/multipack/virtual-tour-to-demo-sites>

Here, you find three main sections:

- MultiPACK Project - description and objectives
- MultiPACK units / Description of the sites and implementer
- Main results / publications for the different site

Each section includes recorded presentations. The articles are listed in the "Main results / publications for the different site".



The screenshot shows the MultiPACK website interface. At the top, there is a navigation bar with links: MultiPACK, About, Partners, Events, News & Media, Get involved, Downloads, Contact us, ITALIANO, and Virtual Tour to Demo-sites. A search bar is located on the right. Below the navigation bar, the page title is "VIRTUAL TOUR TO DEMO-SITES OF MULTIPACK". The main content area features a banner for "EU Green Week 2021" with a "ZERO POLLUTION" theme. Below the banner, there is a section titled "Virtual Tour to Demo-sites of MultiPACK" with a description of CO2 technology for integrated heating, ventilation, airconditioning and refrigeration (HVAC&R) installed in high energy-demanding buildings in Southern Europe. A "Programme" section lists videos to watch. On the right side, there is a "CERTIFICATE OF PARTICIPATION" section with a certificate template for the Norwegian University of Science and Technology.

**MultiPACK Project - description and objectives**  
Dissemination of results for integrated CO2 systems monitored under MultiPACK Project  
*Ekoterini Kriezli (Dorfoss)*  
CO2 heat pump water chillers  
*Armin Hafner, Engin Söylemez (NTNU)*

How to store domestic hot water and combine heating and cooling  
*Armin Hafner (NTNU)*

Modelling of CHCP for supermarkets  
*Michael Jokiel, Christian Schlemminger and Karl Oskar Pires Bjørgen (Sintef)*


Multi ejector solution  
*Ekoterini Kriezli (Dorfoss)*


**CERTIFICATE OF PARTICIPATION**  
Certificate of participation  
awarded to  
Norwegian University of Science and Technology  
for showcasing their commitment to Zero Pollution at the EU Green Week 2021

## Research / Field data

The research data is available on the repository, DataverseNO. The data is clear and understandable.

<https://dataverse.no/>


**DataverseNO**

Certified by: 

Search  Deposit Guide Support Engin Söylemez

My Data Notifications Account Information API Token

Here are all the dataverses, datasets, and files you have access to. You can filter through them by publication status and roles.

☒ Dataverses (1)
 ☒ Datasets (8)
 ☐ Files

**Publication Status**
☒ Published (4)
 ☒ Unpublished (5)
 ☒ Draft (5)
 ☒ In Review (5)
 ☒ Deaccessioned (0)

**Roles**
☒ Dataset Creator
 ☒ Contributor

**1 to 9 of 9 Results**

Replication Data for: MultiPACK Project\_The MultiPACK project: installation and monitoring of integrated commercial refrigeration systems in South Europe Draft In Review Unpublished Contributor

Sep 24, 2021 - NTNU Open Research Data

Tosato, Giacomo; Minetto, Silvia; Hafner, Armin, 2021, "Replication Data for: MultiPACK Project\_The MultiPACK project: installation and monitoring of integrated commercial refrigeration systems in South Europe", <https://doi.org/10.18710/USMPRX>, DataverseNO, DRAFT VERSION

This dataset includes the data for two transcritical CO2 refrigeration systems installed in Italy and Portugal within the project MultiPACK. The real performance of the units providing refrigeration and space air condition is measured, the data was...

Replication Data for: Field assessment of the performance of a state-of-the-art CO2 integrated system for supermarket with distributed HVAC terminals in the shopping area Draft In Review Unpublished Contributor

Sep 24, 2021 - NTNU Open Research Data

Tosato, Giacomo; Minetto, Silvia; Rosetti, Antonio; Hafner, Armin; Marinetti, Sergio; Giroto, Sergio, 2021, "Replication Data for: Field assessment of the performance of a state-of-the-art CO2 integrated system for supermarket with distributed HVAC terminals in the shopping area", <https://doi.org/10.18710/OOSLIF>, DataverseNO, DRAFT VERSION

This dataset includes the field data from the unit installed in a supermarket in Italy. There are sensors in the system to make necessary measurements. The measured data is collected, stored and then converted into usable data. The system layout...

Replication Data for: he MultiPACK project: installation and monitoring of integrated heat pump systems for high energy consumption buildings. Draft In Review Unpublished Contributor

Sep 24, 2021 - NTNU Open Research Data

Tosato, Giacomo; Minetto, Silvia; Hafner, Armin, 2021, "Replication Data for: he MultiPACK project: installation and monitoring of integrated heat pump systems for high energy consumption buildings.", <https://doi.org/10.18710/KUWENG>, DataverseNO, DRAFT VERSION

his dataset includes the data for two heat pump systems installed in the hotels in Italy within the project MultiPACK. The heat pump is installed in a hotel located in a tourist area in North Italy. It is intended to provide heating, cooling and hot...

Replication Data for: MultiPACK Project\_Field data of CO2 integrated refrigeration, heating and cooling systems for supermarkets. Draft In Review Unpublished Contributor

Sep 24, 2021 - NTNU Open Research Data

Tosato, Giacomo; Minetto, Silvia; Rosetti, Antonio; Hafner, Armin; Schlemminger, Christian; Giroto, Sergio, 2021, "Replication Data for: MultiPACK Project\_Field data of CO2 integrated refrigeration, heating and cooling systems for supermarkets.", <https://doi.org/10.18710/T5OHPR>, DataverseNO, DRAFT VERSION

This dataset includes the data for two systems installed in the supermarkets in Italy within the project MultiPACK. The units are located in the cities of Rome and Trento and are called: Rome unit and Trento-Maccioni unit. Daily operations are shown...

Replication data for: MultiPACK Project\_Experimental and numerical investigation of a transcritical CO2 air/water reversible heat pump: analysis of domestic hot water production Draft In Review Unpublished Contributor

Sep 23, 2021 - NTNU Open Research Data

Tosato, Giacomo; Artuso, Paolo; Minetto, Silvia; Rossetti, Antonio; Allouche, Yosr; Banasiak, Krzysztof, 2021, "Replication data for: MultiPACK Project\_Experimental and numerical investigation of a transcritical CO2 air/water reversible heat pump: analysis of domestic hot water production", <https://doi.org/10.18710/RVLSDM>, DataverseNO, DRAFT VERSION

This dataset, in the context of the MultiPACK Project, describes the development of a CO2 air/water reversible heat pump, specifically investigating the domestic hot water (DHW) production operating mode. A dynamic model of the heat pump is developed...

Replication data for: MultiPACK Project\_Performance of integrated R744-packs Part 1 - Compressor mass flow estimation based on data driven models using analytical methods and actual field measurement Published Contributor

Aug 18, 2021 - NTNU Open Research Data

Khorshidi, Vahid; Kriezi, Ekaterini E.; Schlemminger, Christian; Hafner, Armin; Söylemez, Engin, 2021, "Replication data for: MultiPACK Project\_Performance of integrated R744-packs Part 1 - Compressor mass flow estimation based on data driven models using analytical methods and actual field measurement", <https://doi.org/10.18710/H58QAH>, DataverseNO, V1

The mass flow rates through a compressor can be calculated from the polynomial function the manufacturer is providing, or via methods based on energy balance in the system, Sawalha et al. (2017), and Piscopiello et al. (2018), or the volumetric...

Replication data for: MultiPACK Project\_Performance of integrated R744-packs Part 2 - Ejectors performance, a comparison of onsite measurements and model predictions Published Contributor

Aug 18, 2021 - NTNU Open Research Data

Khorshidi, Vahid; Kriezi, Ekaterini E.; Schlemminger, Christian; Hafner, Armin; Söylemez, Engin, 2021, "Replication data for: MultiPACK Project\_Performance of integrated R744-packs Part 2 - Ejectors performance, a comparison of onsite measurements and model predictions", <https://doi.org/10.18710/JV2547>, DataverseNO, V1



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