Deep Energy Retrofit is a true catalyst for addressing the SDGs

Aarhus, Denmark

Kirsten Mariager - My Background

Academic and Business Background

- BSc Civil Engineering
- Head of Sustainability Management

DEM SDG Clients and Partners

- SDG Materiality and Cases

- SDG Management Strategy

- SDG Alignment for International Monitoring & Evaluation

Connecting New Yorkers to a global conversation through the shared language of the SDGs

LEARN MORE

In July 2018, during the annual High-Level Political Forum at the United Nations, New York City became the first city in the world to submit a Voluntary Local Review (VLR). Part of its Global Vision | Urban Action program, the VLR is a review of New York City's local progress toward the global Sustainable Development Goals.

NYC is First City in the World to Report to UN on Local Steps Toward Global Goals

Source: NYC Mayors Office of International Affairs

The voluntary review describes the city´s progress toward the five SDGs the UN prioritized this year:

Voluntary Local Review

New York City's Implementation of the 2030 Agenda for Sustainable Development

July 2018
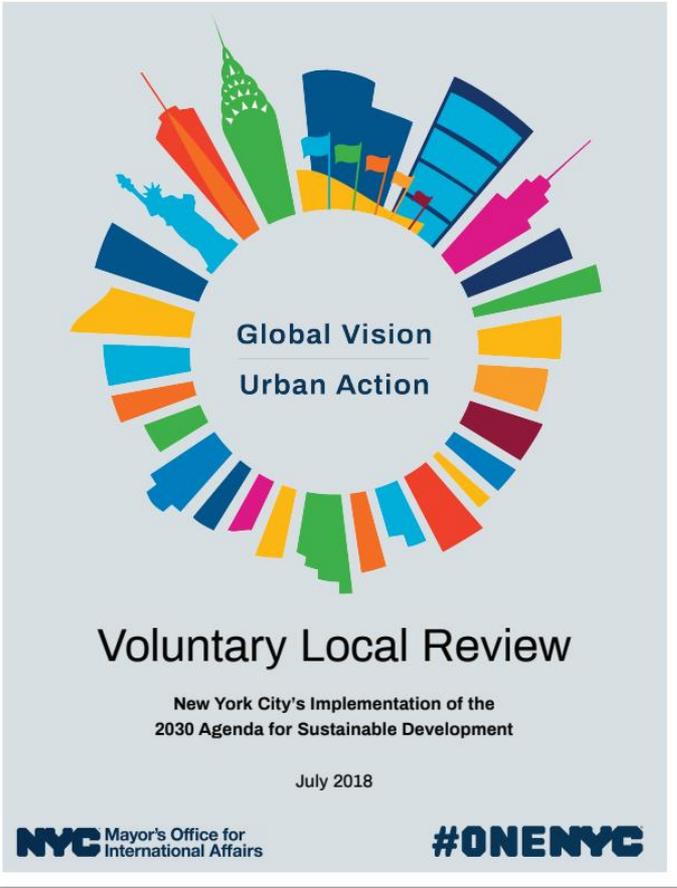
SDG 6:
Ensure availability and sustainable management of water and sanitation for all

SDG 7:
Ensure access to affordable, reliable, sustainable, and modern energy for all

SDG 11:
Make cities and human settlements inclusive, safe, resilient and sustainable

SDG 12:
Ensure sustainable consumption and production patterns

SDG 15:
Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

For each SDG, the NYC Mayor´s Office for Operations has included top-line OneNYC indicators

Each goal provides a sampling of *specific indicators, a description,* and the *source to demonstrate* how the City monitors both operational performance and progress toward its goals.

7 AFFORDABLE AND CLEAN ENERGY

SDG 7:
Ensure access to affordable, reliable, sustainable, and modern energy for all

Top-line OneNYC indicators:

- Greenhouse gas emissions reductions relative to 2005
- Vision 4 indicators, which are related to resiliency

Example:

Indicator name:	**Annual energy retrofit/conservation projects completed**
Description:	The annual number of energy retrofit, solar thermal and co-generation projects installed and operational within or on City structures in a given fiscal year.
Source:	*DCAS Energy Management.*

DEM has a strategic focus on Sustainability

OUR VISION

Based on a passion for energy, we strive to build a future where energy is applied efficiently and sustainably in an affordable way.

OUR VALUES

Our values are most directly linked to four of the 17 UN Sustainable Development Goals, namely 7 – Clean Energy, 11 – Sustainable Cities, 13 – Climate Action and 17 – Partnerships:

7 AFFORDABLE AND CLEAN ENERGY

Our motivation to provide **sustainable energy** services when and where they are needed, increasing energy efficiency and the share of renewable energy in the global energy mix.

11 SUSTAINABLE CITIES AND COMMUNITIES

Our commitment to strengthening peoples living conditions and contributing to the creation of **sustainable cities** and communities.

13 CLIMATE ACTION

Our ability to be creative and adaptable, combating **climate** change and meeting customer needs with innovative solutions.

17 PARTNERSHIPS FOR THE GOALS

Our willingness and desire to foster cooperation and mutual trust within all of our **partnerships**, maintaining a high standard of social responsibility and business ethics in a transparent manner.

The SDGs have provided the foundation for business model innovation and new services on the market

- We have chosen to work actively with the 17 Goals in the **revision of our strategy plan** and have considered what incorporating these goals mean for our business.

- Today, the SDGs are used in our business to:
  - ✓ stimulate product and service innovation
  - ✓ identify and develop new market segments
  - ✓ strengthen foresight management / compliance
  - ✓ increase sales
  - ✓ strengthen our brand
  - ✓ improve operational efficiency
  - ✓ establish a common framework for our daily work

DEMs SDG service model on the market

Our model offers a way to implement, measure, and report on progress being made towards sustainable development as an integrated part of your business strategy.

- SDG Business Strategy

- SDG Materiality Screening/Assessment

- SDG SMART Indicator (KPI) Identification

- SDG Impact Tracking Cases/ Reports

- SDG Measurement System

- SDG Training & Education Workshops

CASE: Deep Energy Retrofit project in the City of Aarhus, Denmark

"Our vision is a CO_2-neutral city by 2030, as a step along the way towards the fossil-free society"

CASE: Deep Energy Retrofit project City of Aarhus, Denmark

The City of Aarhus invests USD 69 mio. in Deep Energy Retrofit to achieve 30% CO_2 reduction in 15 mio. ft^2 of buildings (650 buildings).

A+ Aa ENERGY RENOVATION
Buildings of Aarhus Municipality

Energy renovation of municipal buildings gives major CO2 savings

Project: Aa+ - energy renovation of the city of Aarhus' municipal buildings
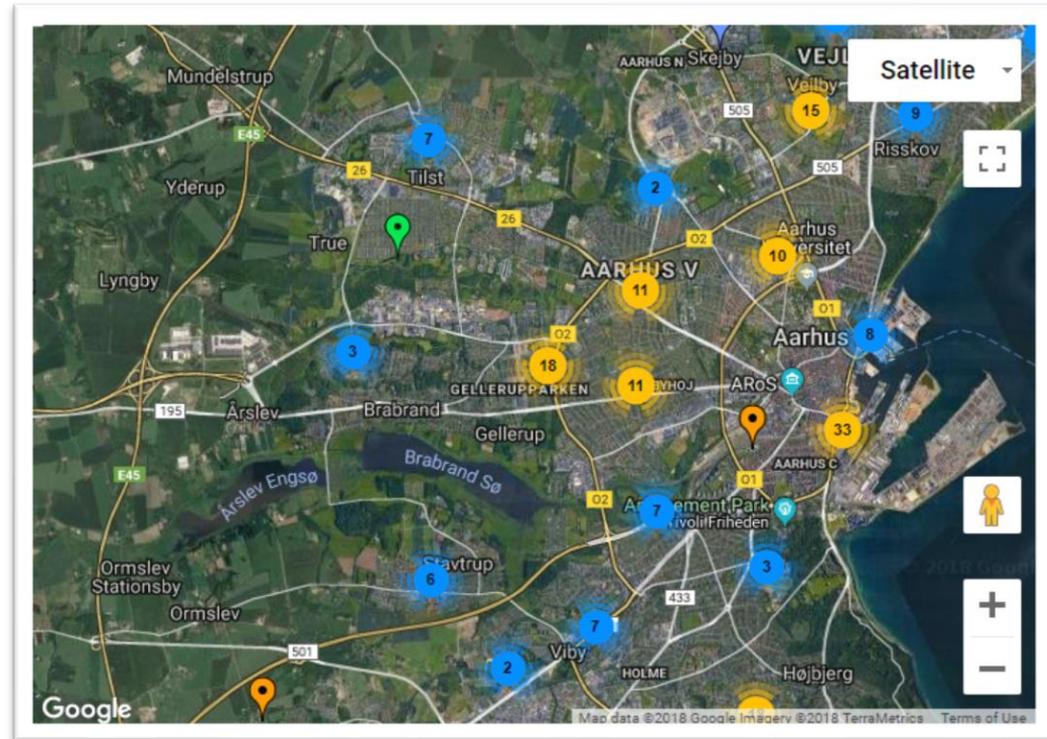
Pre-analysis	City council	Planning	Analysis and implementation of EE & PV	Energy management
2011-2013	2013		2014-2018	2019-2034

DEMs role as the Aa+ Owners Representative

CITY COUNCIL

DANISH ENERGY MANAGEMENT
DeM
FOR SUSTAINABLE IMPACT
Owners representative

Engineering companies for **EE audit**

Engineering companies **for RE assessment**

Engineering company design and procurement

Engineering company design and procurement

Construction company

PV supplier
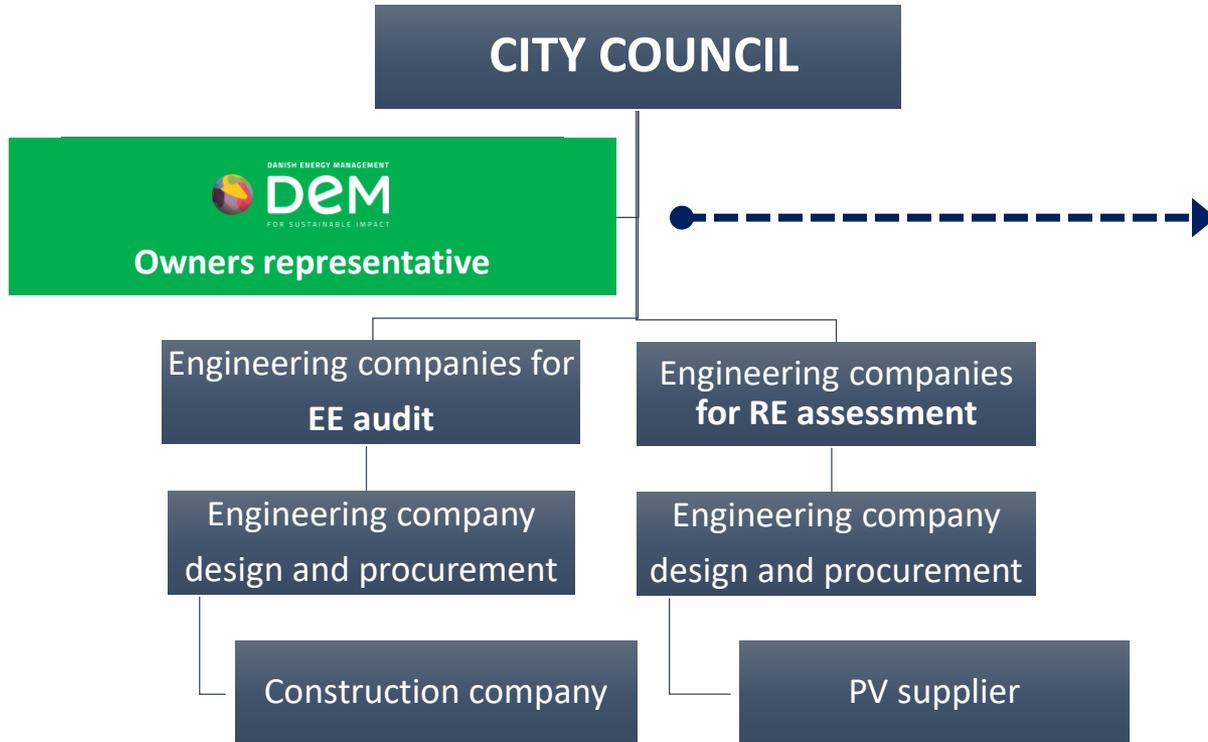
1. Process planning
2. Project Management
3. Tendering
4. Implementation
5. Solar PV
6. Commissioning
7. Capacity development
8. Communications
9. Energy management

Measuring sustainable impact of:
The Design and installation of Solar PV plants

- 22 buildings/PV plants (schools)

- Total installed capacity 1406 kWp

- Mono crystaline PV cells

DEMs Online SDG Measurement System - track and report on progress towards the SDGs following UN standards.

Selection of relevant project SDG indicators for SDG 7

Selection of relevant project SDG indicators for SDG 13

Climate Action

	Goal	Indicator number	Indicator description	Examples and clarification	Check if relevant
			Target: 13.1 Strengthen resilience and adaptive capacity to climate-related hazards		
	13.1.a	13.1.a	CO_2 savings as a result of renewable energy production (Env.)	Projects contain only renewable energy, and not improved energy efficiency, e.g. solar PV or heat pump projects. Renewable energy projects with seperate project number. The indicators 13.1.a and 13.1.b cannot be selected at the same time.	☑
	13.1.b	13.1.b	CO_2 savings as a result of improved Energy Efficiency (Env) in energy renovation- or new build projects	Projects contain renovation or new build. Renewable energy production is considered as an energy saving. Project ex: Sydenergi and Regional Hospital Horsens. The indicators 13.1.a and 13.1.b cannot be selected at the same time.	☐

Project values inserted for the relevant project SDG indicators

Project values inserted for the relevant project SDG indicators and CO_2 savings are calculated

7.2.b Number of renewable energy plants included in the project (Env.)

Description	Guidelines	Number	Comment
Number of solar PV plants		22	**Enter comment**
Number of solar thermal plants		**0**	**Enter comment**
Number of Wind plants	There can be several wind mills ind one wind plant.	**0**	**Enter comment**
Number of Biomass plants		**Enter number**	**Enter comment**
Number of Hydro plants		**Enter number**	**Enter comment**
Number of other plants	Please include description of plant type in comment box.	**Enter number**	**Enter comment**

13.1.a CO2 savings as a result of renewable energy production (Env.)

| Description	Guidelines	Number	Comment
Number of ton CO2 saved	Calculated over lifetime (eg. DK Solar PV = 25 yrs., heat pump = 20 yrs.) For danish projects the value is imported from the calculation module. For international projects state the used CO_2 emission and the source in the comment box	6004	**Enter comment**

Summary of project data

Results are exported to MS word and can be copied into reports and presentations

The result is a **graphic representation** of project contribution to selected SDGs, Targets and SMART Indicators.

This is a powerful tool for **reaching a wide range of stakeholders** with specific key figures.


Distribution of 264 worked hours in SDG's

- 13 Climate Action
- 11 Sustainable Cities and Communities
- 7 Affordable and Clean Energy
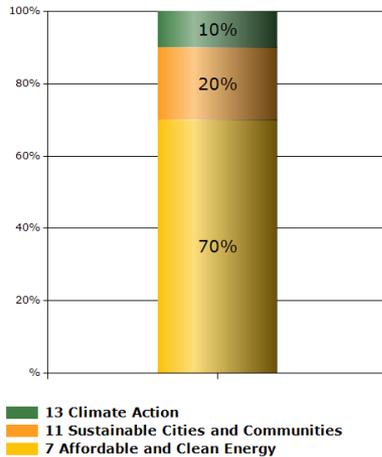
1 implementation project with renewable energy is planned.

35,315,625 kWh renewable energy production is planned.

Annual contribution to renewable energy production
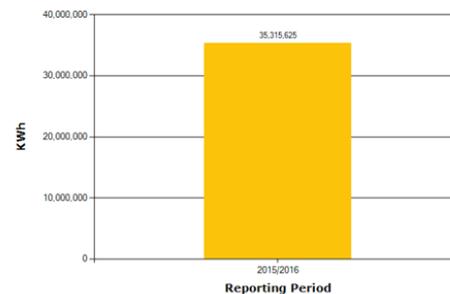
CO2 saving of 6,004 ton is planned.

Annual contribution to CO2 saving
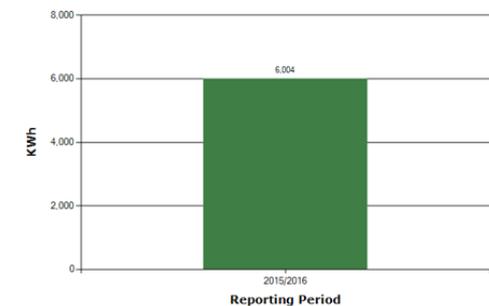
Visual communication – Project SDG cases

"Energy renovation is tailored to user needs and experiences, ensuring plans that provide better overall building condition."

Progress towards sustainable development is measured
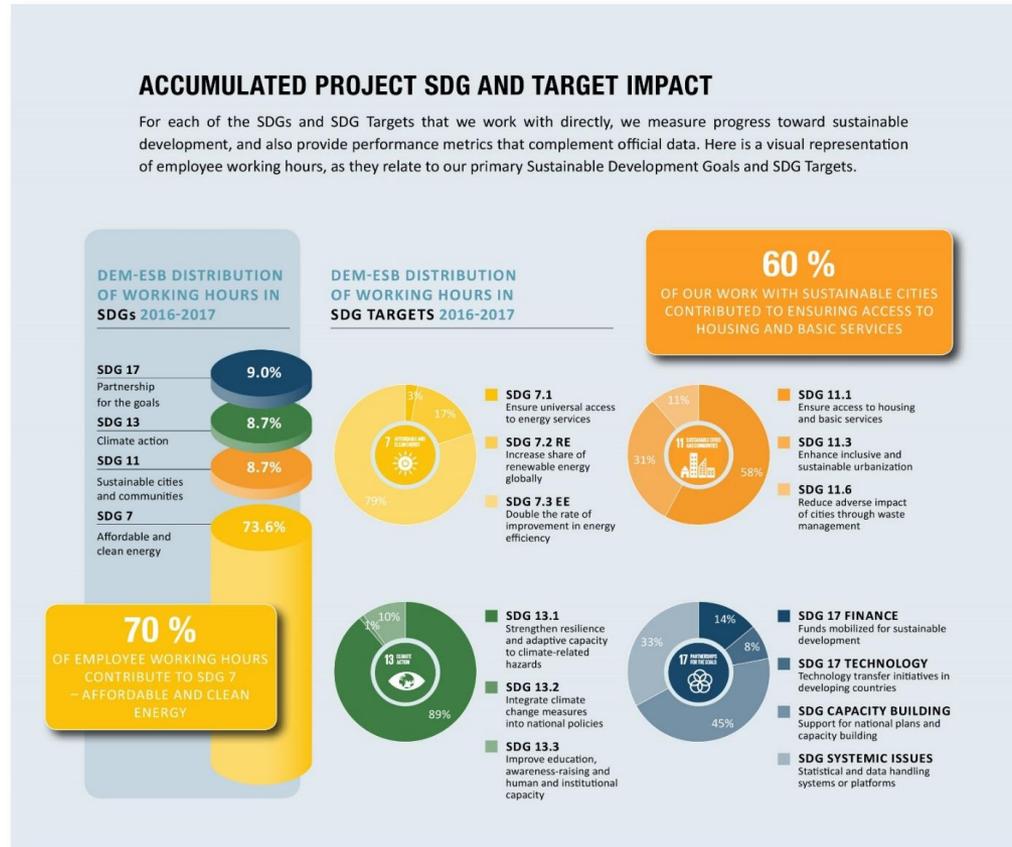
# Annual sustainability impact reports
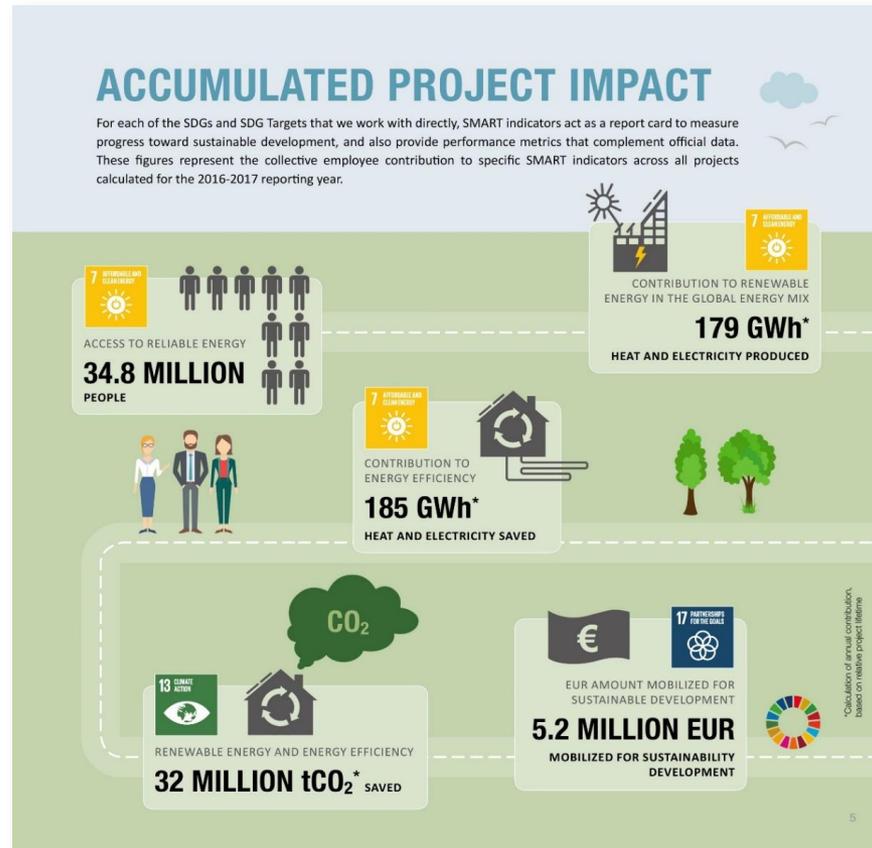
Thank you!
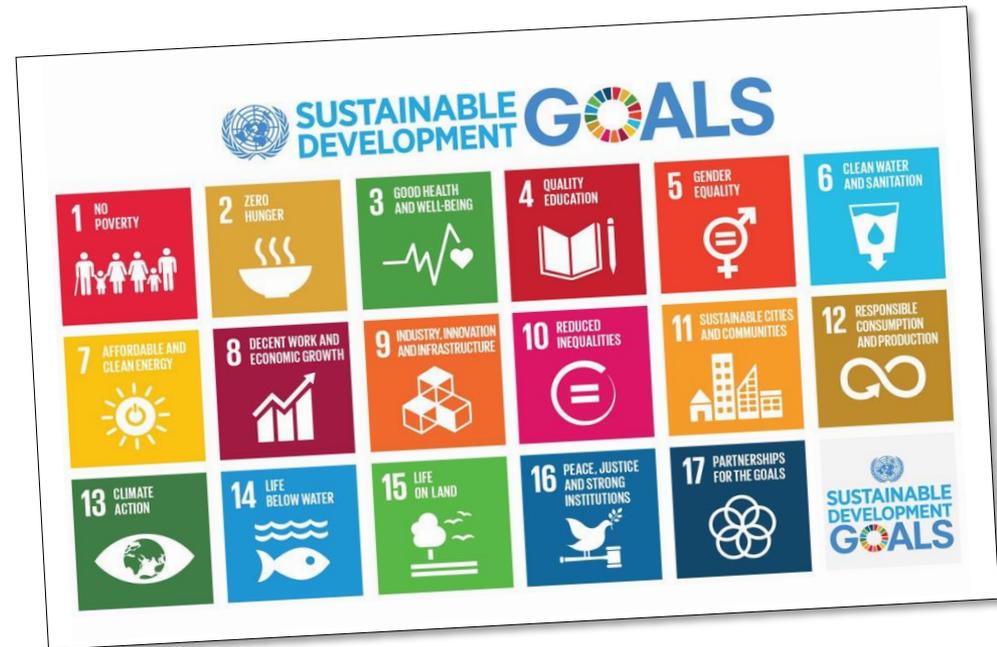
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