Toolkit Webinars

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Why we need the Step-wise Toolkit?

These tools facilitate the development of Clean Energy Transition Plans (CETs).

SECAP	LAEP	SEAP
Sustainable Energy and Climate Action Plan	Local Area Energy Plan	Sustainable Energy Action Plan

What are the Clean Energy Transition Plans (CETs), and what do we need to demonstrate?

Strategic frameworks that outline how governments, organizations, or regions aim to achieve targets for clean energy usage, enhance energy efficiency, and reduce greenhouse gas emissions.

For instance, the Sustainable Energy and Climate Action Plan (SECAP):

- **Objective:** Achieve a reduction in greenhouse gas emissions by 2030.

Components:
- **Baseline Emission Inventory:** Identifies main emission sources.
- **Risk & Vulnerability Assessment:** Evaluates local climate risks.
- **Energy Actions:** Promotes energy efficiency and renewable energy. (so estimate the energy savings)
- **Climate Adaptation:** Enhances community resilience to climate change.
- **Monitoring:** Tracks progress and allows for plan adjustments.

How can we demonstrate greenhouse gas emission reductions?

Which strategies we need to plan and implement?

One of the most accurate method is the use of the **Dynamic Energy Simulation of Buildings**

Dynamic building energy simulation refers to the use of computational models to predict and analyze the energy performance of buildings by creating a Digital Twin
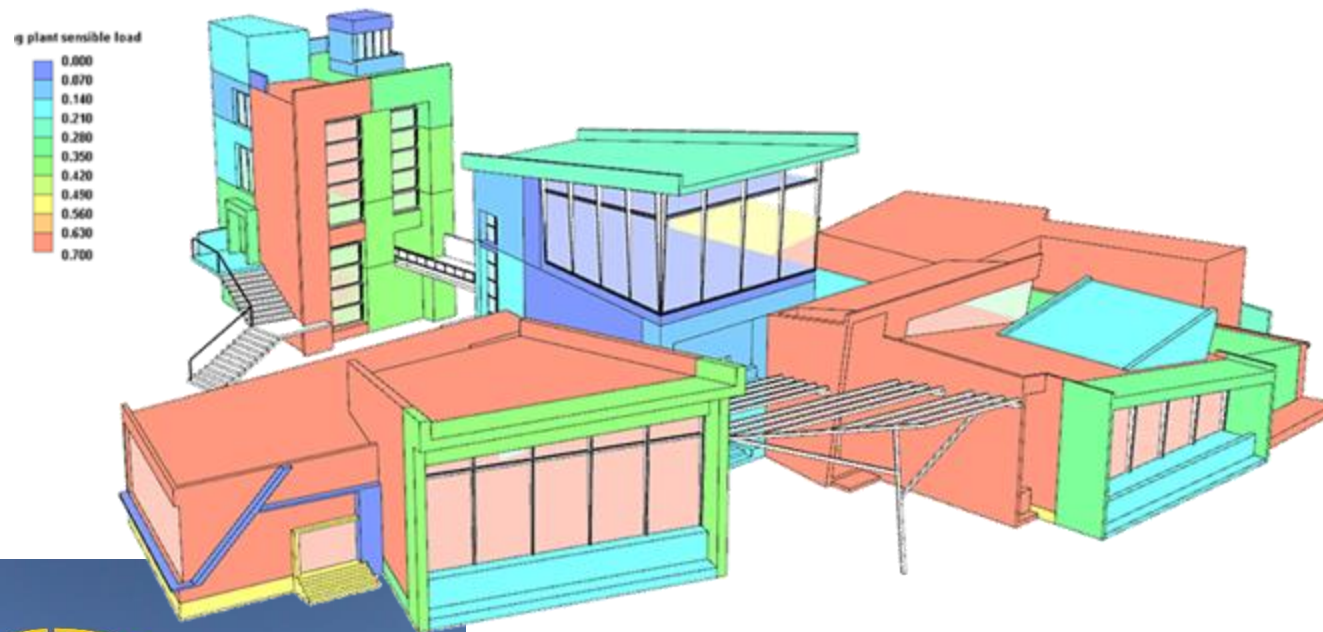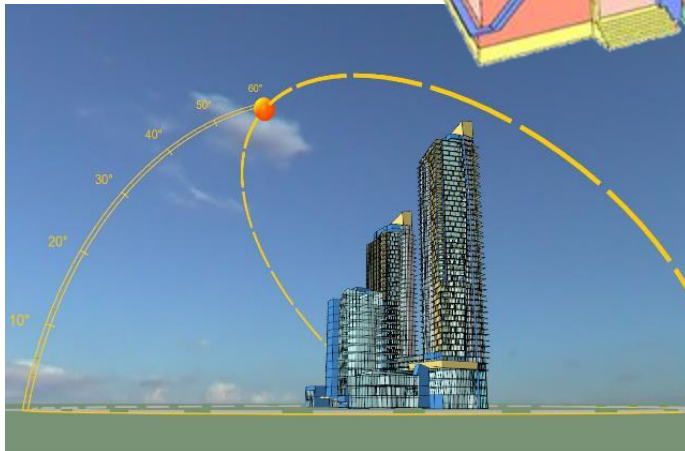
IES ICL
Intelligent Communities Lifecycle

The Stepwise toolkit utilize the **Dynamic Energy Simulation**

VE

Virtual Environment (VE)

The Virtual Environment software is a suite of integrated building analysis tools that translate complex building physics and detailed dynamic thermal calculations.

The pros and cons of dynamic energy simulation of buildings:

Pros:

1.Accurate Predictions: Models energy consumption realistically by considering dynamic factors.

2.Comprehensive Analysis: Identifies energy-saving opportunities.

3.Climate Adaptation: Evaluates building resilience to future climate conditions.

4.Policy Support: Helps meet regulatory and sustainability standards.

5.Stakeholder Engagement: Visualizations enhance communication with stakeholders.

Cons:

1.Complexity: Requires detailed data that can be difficult to obtain.

2.Resource Intensive: Time-consuming and may incur higher costs for software and training.

3.Uncertainty in Inputs: External factors can affect prediction reliability.

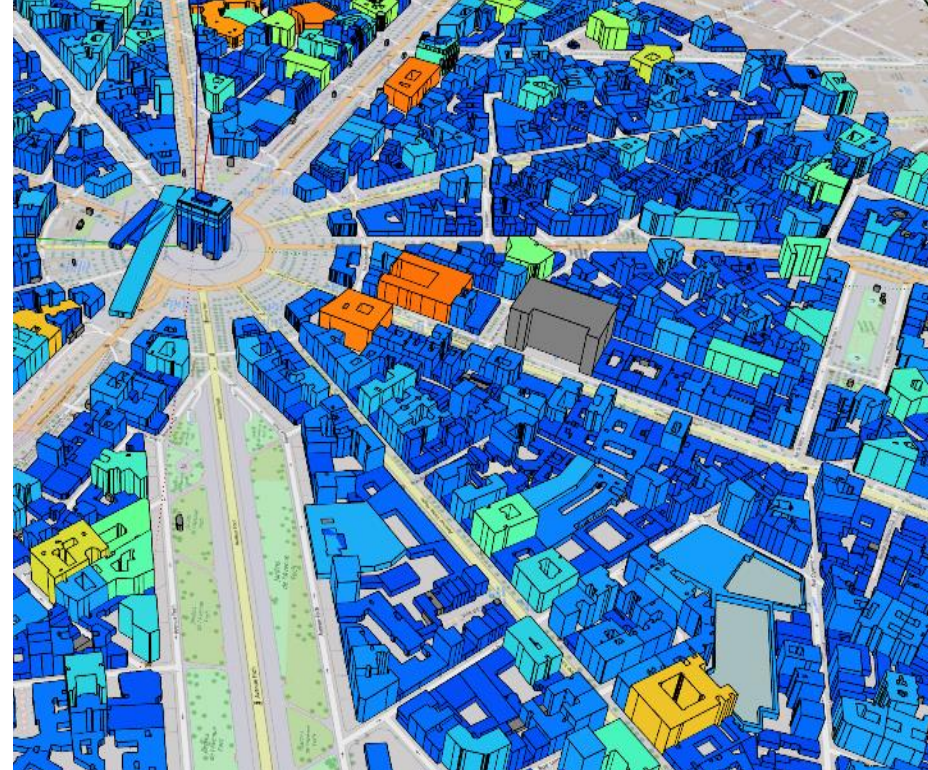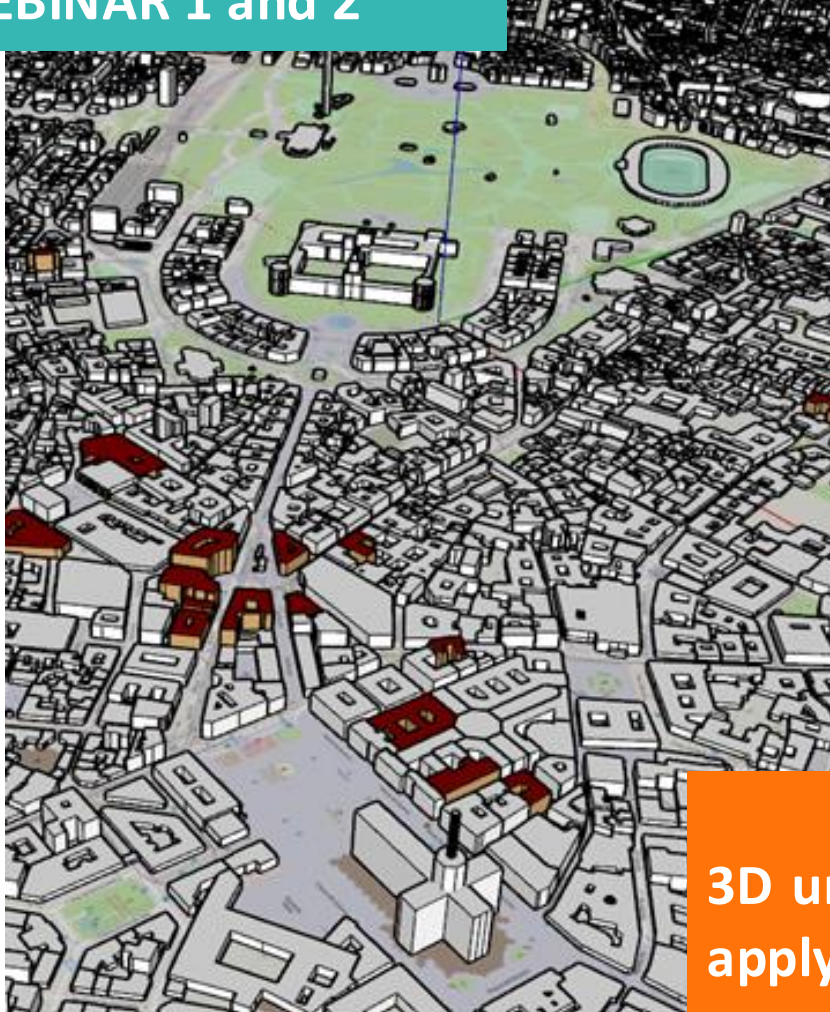**4.Steep Learning Curve**: Requires specialized expertise to operate effectively.

CROSS THESE BARRIERS (CONS)
IES Developed iCD

WEBINAR 1 and 2

iCD

Intelligent Community Design (iCD)

3D urban master planning tool that assist in creating baseline and apply retrofit scenarios at urban level .

WEBINAR 3

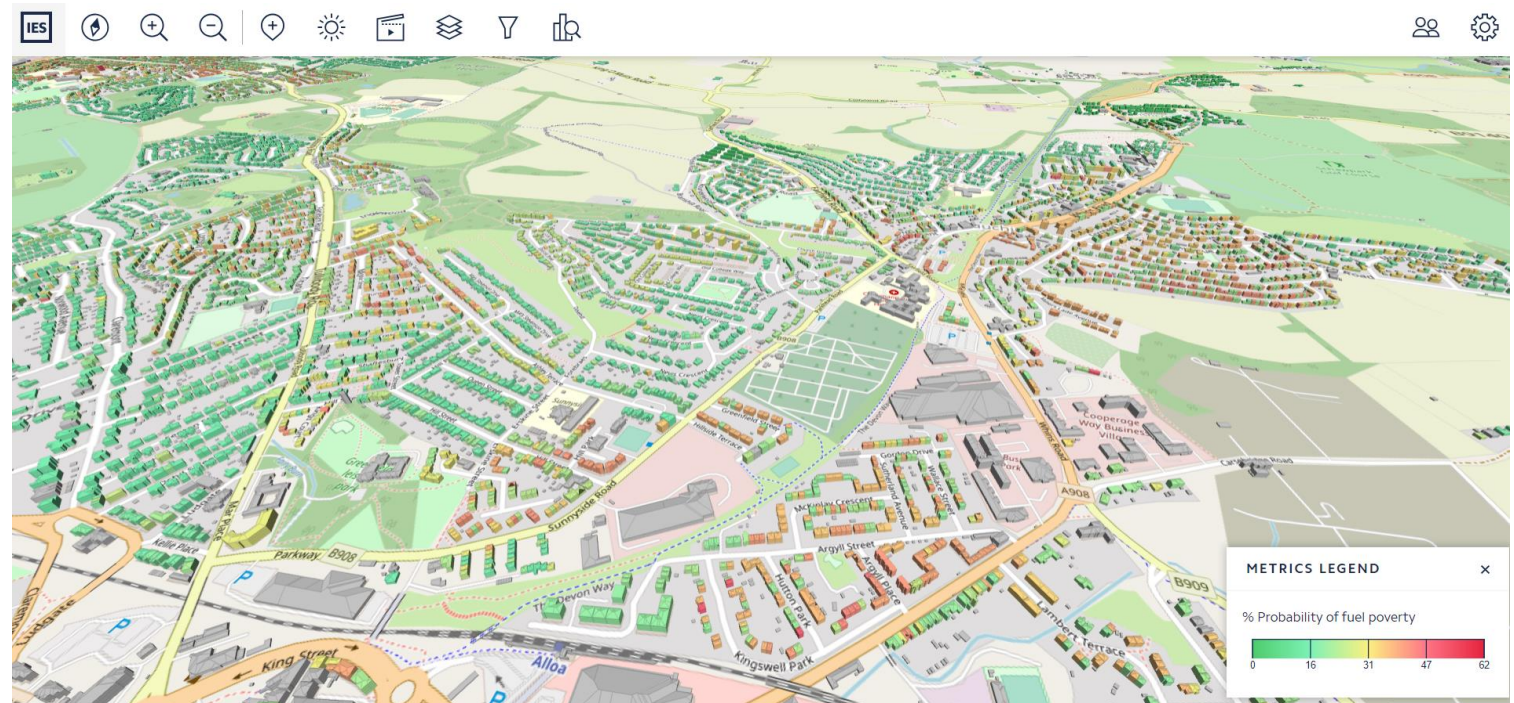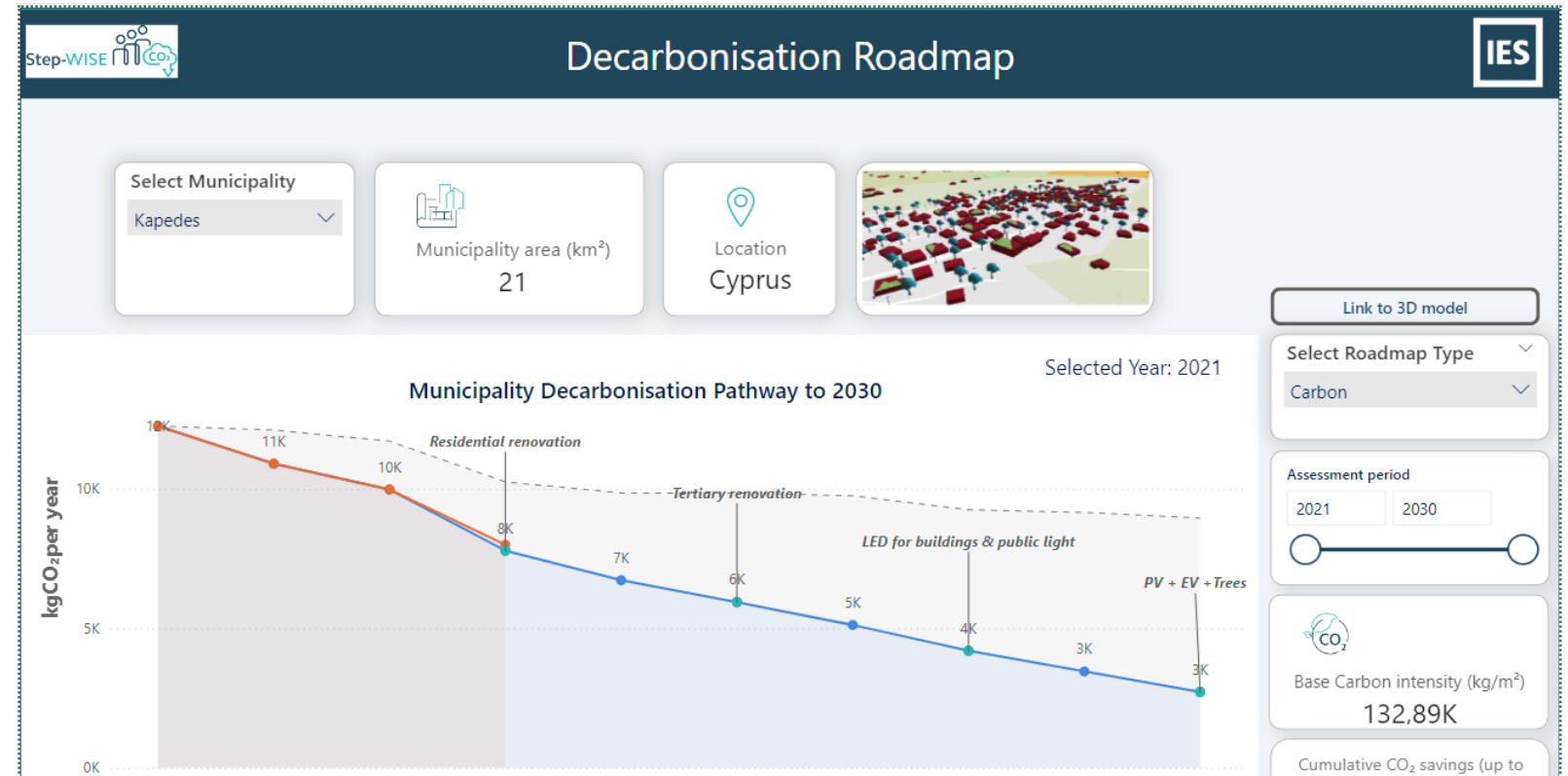**Collaboration Monitoring and Visualization Platform**

Provides 3D visualization and stakeholder engagement features

WEBINAR 3

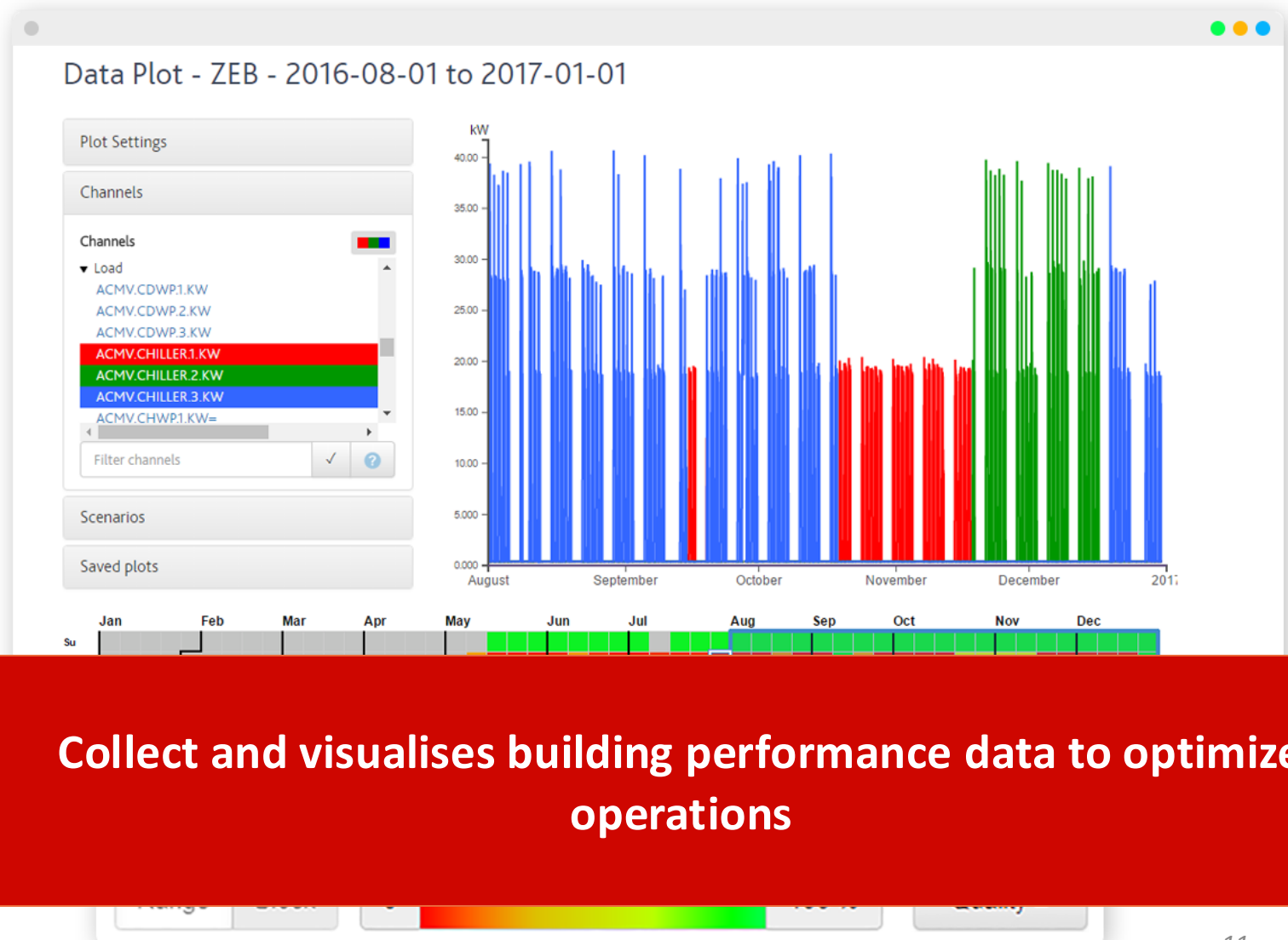**Roadmap visualisation for the implementation of decarbonisation scenarios**

Provides the visualisation of the Roadmap with the scenarios for the energy and CO2 emission reduction

WEBINAR 4

Intelligent Control and Analysis (iSCAN)

Collect and visualises building performance data to optimize operations

WEBINAR 4

Step-WISE CO2

iVN

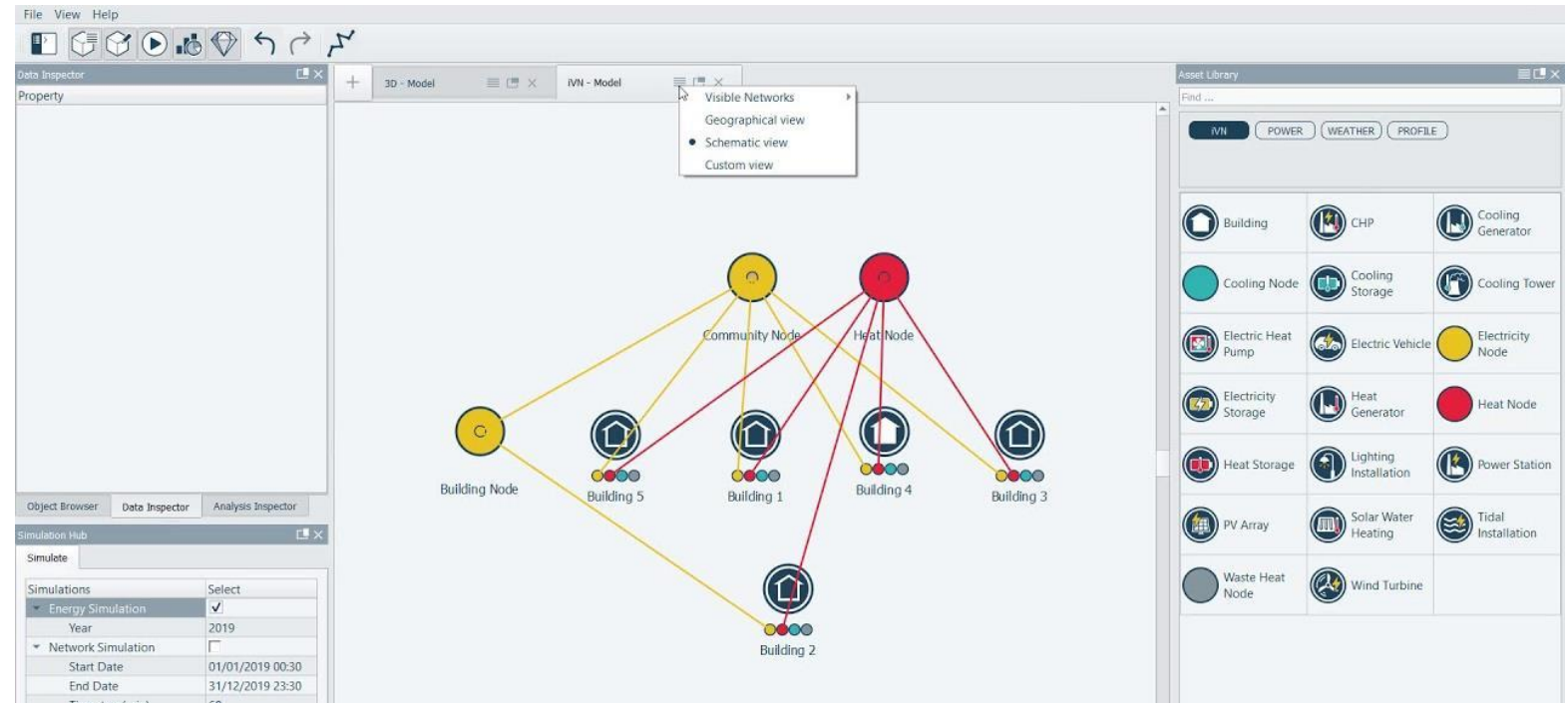**Intelligent Virtual Network (iVN)**

The iVN is a network modelling and management tool that enable advanced analysis of local energy systems including district heating and storage

Webinars

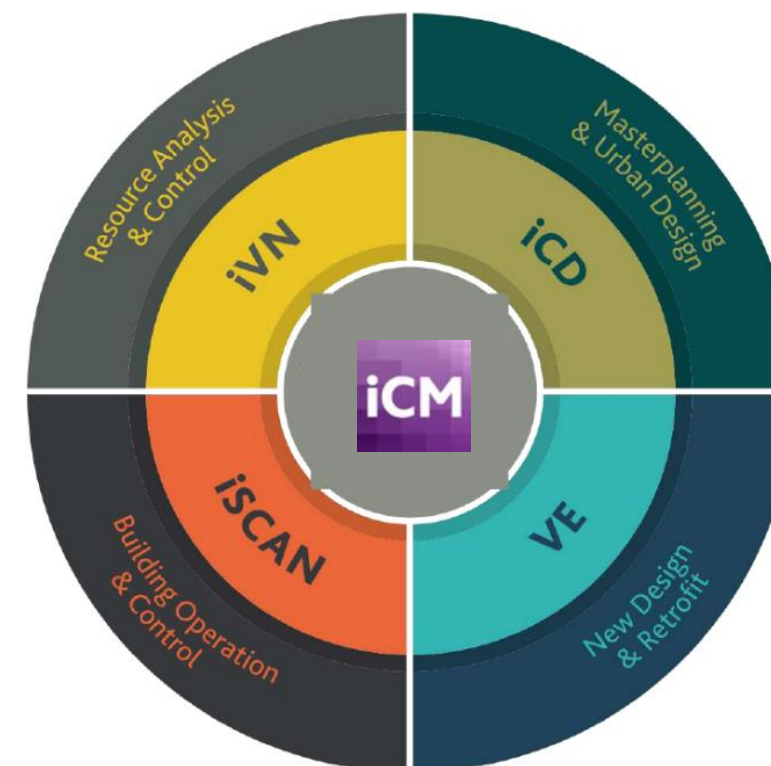- WEBINAR 1: How to create the Baseline (AS IS)

- WEBINAR 2: How to create and compare scenarios

- WEBINAR 3: How to visualise and analyse results

- WEBINAR 4: Technical Skills Enhancement

Webinar 1

- Discovering iCD
- Creating a model from an OSM import
- Creating geometry manually
- Object attributes
- Export e Import file CSV
- Data Painter and filters
- Adjacent buildings
- Point objects
- Solar Assessment and Roof solar Potential
- Run Simulation Options
- Create a Model from GIS Files and CSV Files to Enrich.

TOOLKIT MINIGUIDE

Part 1 & 2

Changelog

Version:	Date:	Status:	Author:	Reviewer:	Comments:
0.1	14.10.24	Working	Alessandro Piccinini [R2M]		Miniguide Part 1&2 of 4

Develop a baseline

iCD

we can provide templates and examples.

Data Gathering

Gather data on building geometry, type, energy consumption, system performance, and usage patterns from government agencies, utilities, research institutions, and open data platforms.

iCD model creation

ICD models create digital twins of real buildings to simulate their behaviour and provide a valuable baseline for testing and monitoring various options.

Model and simulation

Import all essential data from available data sets into iCD. Develop a virtual model of your area. Assess with a high confidence a baseline for you decarbonisation journey.

Review Results

A reliable baseline model is crucial for a successful zero-carbon journey, providing a stable foundation for future enhancements and ensuring confidence in the process.

Webinar 2 iCD

- Results visualisation
- Scenarios
- Time Dimension e Multi-year simulation
- Basic Carbon Emissions Analysis
- Basic Cost Analysis
- Creating a custom attribute

PART 1 and 2 - Extra Features

- Boundaries
- Accessibility Assessment
- Walkability Boundaries
- Complex Geometry

Step-WISE

TOOLKIT MINIGUIDE

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Identify and analyse potential actions

we can provide templates and examples.

Identify high emitters

Engage with stakeholders that have a potential of a high impact on carbon emission reductions. Start a conversation, understand their view on decarbonisation and actions taken up to date. Include their perspectives and plans in decarbonisation scenarios.

Sort archetypes

Identify groups of similar buildings that can benefit from the same upgrades. This will help to apply the changes to the model. Most importantly, it will streamline a process of future incentives design to help certain parties and community groups to achieve the set goals.

Create scenarios

Create scenarios, and investigate their impact by running multiple simulations using ICL technology. iCD tool allows to investigate larger range of various solutions. This ensures a selection of the best ones, and in the most beneficial sequence.

Thank you