

# CO2-neutral building stock by 2050? Get your real estate screened in good time!

24 November 2022

On top of the headaches of keeping energy bills payable in the short term, property managers are today also kept awake by long-term questions like as: 'How do we achieve CO2 neutrality by 2050?' and 'Is it still worth investing in our current buildings?' Ingenium has already proposed answers to a government agency that commissioned us examine its extensive real estate holdings.



To have an objective assessment framework, we use the definition applied by VEKA when launching the mandatory EPC for non-residential buildings:

'A carbon-neutral building is a building, the CO2 emissions of which have been reduced to zero by lowering energy needs and ensuring that the remaining energy needs are met with renewable energy sources. It is a building in which the measured total energy consumption in use phase is covered by renewable energy sources.'

The measurement is done at building or site level and takes into account both regulated (HVAC, lighting,...) and non-regulated consumption (lifts, data centres, electric mobility,...).

Buildings that in future no longer meet the European E-label standards will decrease in value. Property managers would therefore do well to intervene in good time. A question that must certainly be asked is whether it is still useful to take energy measures or not.

We undertook such an analysis for a government institution with many dozens of buildings across Flanders. Our starting point in each case was the existing situation. A good location and accessibility were basic requirements for each building. We then went on to map the structural condition and the state of the technical installations. Armed with this information, the decision was made each time either to invest further in the building or to quit it in the long term (sale, rental, concession, long lease).

Where it was decided to keep the building, a detailed study followed. We carried out an energy audit and then proposed energy-saving measures like insulating the building envelope, adjusting the heat delivery system to allow the use of heat pumps, and installing solar panels. We calculated the CO2 reduction for each building and each measure. In this way each building was given a score that makes comparison possible.

A multi-year investment plan was also coupled to this. Plotted out on a timeline (figure A), it quickly became clear in which years the largest investments needed to be planned, and their effect on CO2 reduction. All buildings were also brought together in a 'heat map' in which the score obtained by each building was compared to the cost per m2 of measures to achieve CO2 neutrality (figure B – Cost Driven) or to the residual value based on the CO2. The redder the zone in which the building is located, the worse it scores, and therefore the higher the investments will have to be (figure B) or the greater the residual value.

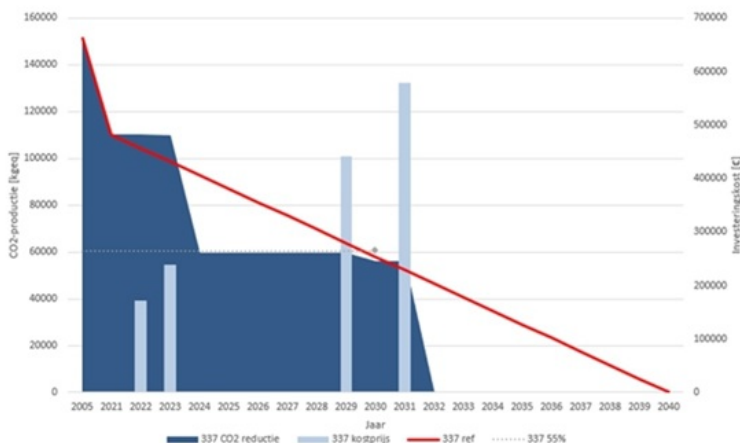


Figure A

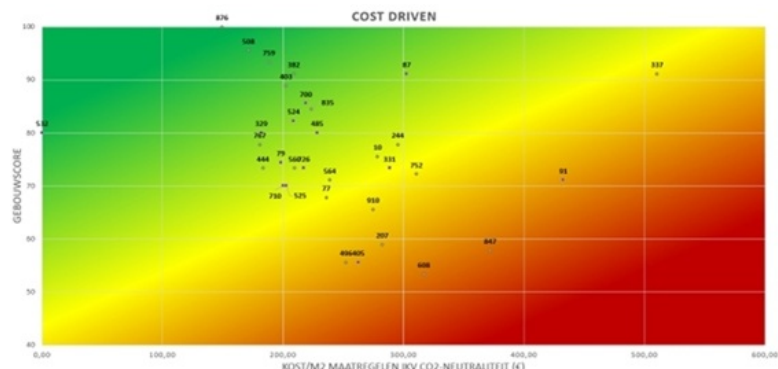
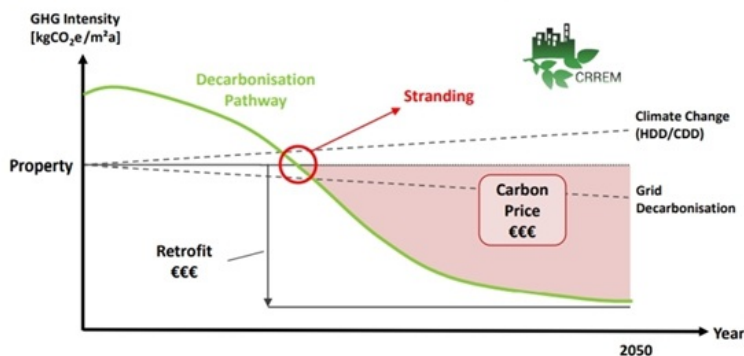


Figure B

For mapping the risk of 'economic obsolescence' of property holdings due to climate change Ingenium uses the CRREM (Carbon Risk Real Estate Monitor), developed by the EU. Based on various parameters, the CRREM determines how much a building – and all associated installations – is worth today and in the future, according to the ever-higher sustainability expectations.

This data can also be displayed in a very visual way. The 'stranding point' is always crucial: this is the point at which your building performs as this type of building needs to perform if it is to meet the increasingly stringent CO2 reduction targets – the green line in figure C. If no efforts are made to modernize – 'retrofit' – the building, the market value will continue to decline after this stranding point.

#### ASSET LEVEL STRANDING DIAGRAM



Ingenium has years of knowledge and a range of tools to map the energy sustainability (or lack thereof) of real estate, to propose measures towards carbon neutrality and to translate these investments into realistic multi-year plans. The Flemish government's desire to screen its own assets proves that this is indeed a hot topic. So don't hesitate to contact us for information, without obligation.

Like to know more about how your real estate holdings can become carbon-neutral by 2050? Then contact Nico De Roeck via 050 40 45 30 or [nico.deroeck@ingenium.be](mailto:nico.deroeck@ingenium.be).

You can also find more background on the Road to Carbon Neutrality in [this article](#).