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Dear reader,

2017 will be a year of intense political debate about the many [energy policy proposals](#) tabled by the European Commission. After our [earlier analysis of the Winter Package](#), BPIE is today releasing a [new report asking the question whether Member States are ready to embrace smart buildings](#). The result is somewhat sobering. As the Commission's package puts the consumer at the centre of energy policy-making, national governments have an opportunity to deliver the benefits for their citizens.

BPIE has some suggestions: in a [report for Poland now summarised in English](#), we outlined how the renovation of single-family buildings could be supported. This would not only increase the living conditions of many but also address the air quality problems in the country. And [four new BPIE briefings analyse the Package from a national angle](#) and suggest opportunities for governments to consider during the negotiations in the coming months.

Further, the idea of [Individual Building Renovation Passports](#) is gaining increasing support, a useful instrument for home-owners as demonstrated by this past webinar. Taking a longer-term perspective to 2050, we are participating in a [project led by the Potsdam Institute for Climate Impact Research \(PIK\) to calculate CO<sub>2</sub>-emission pathways for Europe](#) which was started late last year.

So a lot of issues to be discussed, make sure you don't miss the events providing an opportunity for debate, BPIE's staff will speak at many in the coming weeks.

With best regards,

Oliver Rapf, Executive Director



### Is Europe ready for the smart buildings revolution?

An [analysis](#) by BPIE on the readiness of EU countries to transition to smart buildings concludes that no Member State is fully prepared to take advantage of the benefits that smart building technologies will entail. BPIE assessed aspects such as dynamic operability, energy-system responsiveness, renewable energy uptake as well as dynamic and self-learning control systems. The [report](#) presents a series of progressive policies and innovative front-runner projects which prove the economic viability of smart buildings. BPIE gave a presentation on this topic at the CA-EPBD event [Smart Buildings for a greener Europe: Emerging Policy and Practice](#), the streaming is available.

# IS EUROPE READY FOR THE SMART BUILDINGS REVOLUTION?



Source: Buildings Performance Institute Europe, "Is Europe ready for the smart buildings revolution?", 2017, [www.bpie.eu](http://www.bpie.eu)

## FOCUS ON



### THE "CLEAN ENERGY FOR ALL EUROPEANS" PACKAGE

#### Briefing

On November 30 2016, the European Commission released important pieces of European energy legislation in the "Clean Energy for All Europeans" package. The package covers energy efficiency, renewable energy, the electricity market, consumers and governance rules for the Energy Union.

This paper analyses the elements in the European Commission's package related to achieving this vision and highlights missing elements which need to be addressed through the legislative negotiations with the European Council and Parliament. It builds on the BPiE briefing "9 Ways To Make The Energy Performance Of Buildings Directive More Effective" [1].

This package is a once-in-a-decade opportunity to propel the EU towards a future-proofed, efficient and sustainable building stock. The package should enable citizens, owners and tenants to take the right decisions for the buildings they live and work in, create more transparency about energy performance of buildings and related indicators such as comfort and well-being, and provide access to fair and effective financing.

Europe's vision should be to have a decarbonised building stock comprised of healthy, comfortable, affordable, sustainable buildings with a very low intrinsic energy need, supplied by renewable energy sources, and intelligently integrated into a decarbonised, flexible energy system.

Overall, while there are some interesting new elements in the package, such as the introduction of a smartness indicator provisions to protect vulnerable consumers and measures to leverage financing, the proposals fail to trigger more and deeper renovation activities. Triggering renovation activities requires striking a balance between creating tools which stimulate the buildings' efficiency market and defining mandatory requirements for better energy performance of public and commercial buildings. This means developing tools such as individualised renovation roadmaps for buildings to better inform and encourage building owners on how to invest in their buildings, and expanding existing legislation to require not only renovation of central government buildings but all public buildings.

The role of buildings in the transition to a sustainable and secure energy system must be recognised and supported across all of the legislation in the package, not only the Energy Performance of Buildings Directive (EPBD) and the Energy Efficiency Directive (EED) but also the Directive for the promotion of renewable energy (RED) and the package of legislation related to the electricity market and consumers.

The following table summarises the content of the proposals and what we consider missing to achieve key aims.

[1] BPiE, "9 Ways To Make The Energy Performance Of Buildings Directive More Effective," 2016. [Online]. Available: [http://bpie.eu/wp-content/uploads/2016/09/EPBD-9ways\\_Eng.pdf](http://bpie.eu/wp-content/uploads/2016/09/EPBD-9ways_Eng.pdf)

## BPiE briefing on the "Clean Energy for All Europeans" package available in Romanian, Polish, German and Greek

Last November, the European Commission released [important pieces of European energy legislation in the "Clean Energy for All Europeans" package](#).

The package covers energy efficiency, renewable energy, the electricity market, consumers and governance rules for the Energy Union.

This [paper](#) analyses the European Commission's package and highlights missing elements which need to be addressed through the legislative negotiations with the European Council and Parliament.

The briefing is now available in German, Polish, Romanian and Greek, including implications for each country.



## BPIE report on renovation opportunities in Poland: summary available in English

The [report](#), available only in Polish, identified the renovation of single-family houses as vastly under-funded compared to other sectors. It focused on three topics related to technical design, legislative requirements and a possible financing scheme targeting these buildings.

A [short summary](#) of the findings is now available in English. The summary contains mechanisms and technical requirements for the renovation of single-family buildings as well as the needed policy changes.

### INTRODUCTION

In 2016, BPIE held two workshops on the topic of improving the framework conditions for the deep renovation of the Polish building stock. These workshops explored issues ranging from the current and future funding levels and external breakdown of renovation activity, to technical and legislative matters. In addition, a report written in 2016 by BPIE, on "Financing Building Energy Performance Improvement in Poland (I)", identified the renovation of single-family houses as vastly under-funded

compared to other sectors. The report focused on three topics related to technical design, legislative requirements and a possible financing scheme targeting these buildings.

The following is an English summary of the second BPIE report on renovation in Poland (published only in Polish), "Wymagania Techniczne i Modelowa Wycena dla Termomodernizacyjch Budynków (I)"

### PROPOSED SUPPORT MECHANISM FOR THE RENOVATION OF SINGLE-FAMILY BUILDINGS

Given the current funding inadequacy for the renovation of single-family buildings, BPIE developed the outline of a financing scheme, as presented and discussed during the June 2016 workshop. There are some 9 million single-family houses in Poland, of which only around 1% has adequate insulation. The target market is therefore significant. Correspondingly, a programme to tackle this section of the housing stock needs to be ambitious, in terms of scale, duration and energy performance.

An effective programme needs to be established targeting around 1 million houses, or 20% of the total, over a 10-year

period. Such a large programme clearly needs significant funding – based on a renovation cost of 60,000 PLN per house, this would require a total investment in the order of 60 billion PLN (€2.4bn). Assuming an average subsidy rate of 20%, this amount equates to 12bn PLN (€480m) of public funding or an average annual rate of 1.2bn PLN (€480m). While this may seem a significant sum, by comparison, the much smaller multi-residential housing sector is currently funded to the tune of approximately €240M p.a.

On the next page is a summary of the key features and possible funding sources.



## Global Alliance for Buildings and Construction: website and global status report 2016 now available

The [Global Alliance for Buildings and Construction](#) (GABC) was launched to implement the Paris COP21 goals within the built environment. It aims to mobilise all stakeholders, including Member States and non-governmental actors from the buildings and construction sector to scale up climate actions.

The website is now available, detailing the Alliance objectives, partners and activities. A Global Status Report for 2016, "[Towards zero-emission efficient and resilient buildings](#)", prepared by the GABC with BPIE's contribution, was launched at COP22.

## European Calculator Factsheet

### At a glance:

**Title:** EU Calculator: Trade-offs and pathways towards sustainable and low-carbon European Societies

**Instrument:** Research and Innovation Action (RIA)

**Total EU contribution:** 5,283,351.25€

**Durations:** 3 years

**Start Date:** 1st November 2016

### Team:

- Potsdam Institute for Climate Impact Research, D
- Climact SA, B
- Buildings Performance Institute Europe ASBL, B
- Austrian Society for Environment and Technology, AT
- University of Copenhagen, DK
- Swiss Federal Institute of Technology of Lausanne, CH
- University of East Anglia, UK
- PANNON Pro Innovations Ltd., H
- Climate Media Factory UG, D
- T6 Ecosystems srl, IT
- SEE Change Net, BH
- Delft University of Technology, NL

### Keywords:

Low-carbon society and economy, technology innovation, interactive pathway exploration, transparent modelling, climate services.

### Website:

<http://www.european-calculator.eu>



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 728493

### The mission:

The European Calculator aims to provide decision makers with an accessible modelling solution on European Member State level plus Switzerland. The novel and pragmatic modelling approach is rooted between pure complex society-energy system and integrated impact assessment tools. It introduces an intermediate level of complexity and a multi-sector approach that is based on co-design with scientific and societal actors.

The model relates emission reduction with human lifestyles, the exploitation and / or conservation of natural resources, job creation, energy production, agriculture, costs, etc. in one highly integrative approach and tool which enables decision makers to get real-time policy support underpinned by comprehensive trade-off analyses. Consequently, the approach will satisfy practical needs of decision makers.

### Expected outcomes:

- A model of intermediate complexity that facilitates the evaluation of trade-offs and synergies arising from interventions at sectoral (buildings, transport, agriculture, etc.), country or incremental levels of emissions and warming.
- An easy to use web-version that is flexible enough to accommodate existing policy pathways from other institutions, and allows users to construct and explore the impacts arising from their own pathways.
- A trusted modelling approach based on a strong co-creation and consultation process between academia, public and business sectors.
- A common platform (WIKI) where science, and policy and civil society stakeholders can share and test their understanding of the interaction between climate change, resource utilisation and evolving policy targets.

## EU Calculator: trade-offs and pathways towards sustainable and low-carbon European Societies

The EU Calc project, and launched end of 2016, will develop an innovative open-source modelling-tool based on a multi-sector approach (power and heat generation, transport, industry, buildings, agriculture and food and more). The “Transition Pathways Explorer” will allow users to create their own decarbonisation pathways online and visualise European and Member State greenhouse gas emissions and their relation to current and future climate development and policies. The goals are to allow an informed debate around the 2050 European competitive low-carbon economy and a resilient Energy Union with a forward-looking climate change policy and engage stakeholders on the long run. BPIE is a partner. A first workshop March 23 in Brussels will engage experts on how to make the tool fit their needs. To join, [send an email to Bernd Hezel](#).

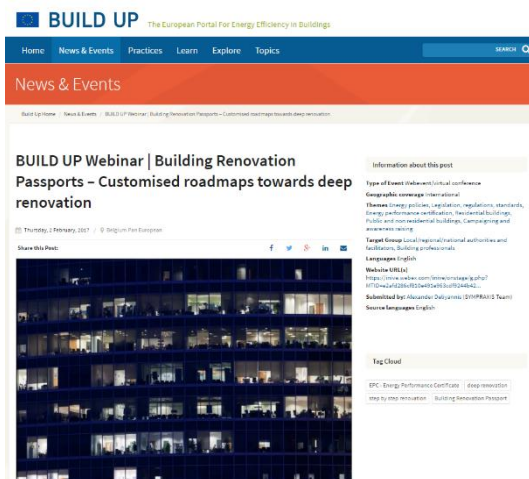


## Making shopping centres more energy efficient and comfortable with innovative tools and solutions

A set of reports was released by the EU-funded project CommONEnergy, presenting the developed technologies: [ventilative cooling](#), [artificial lighting](#), [green mobility](#) (electric and hydrogen), gathering them in [systemic solution-sets](#) to exploit synergies and more. Focus on two: A [virtual Integrated Design Process library](#), soon accessible: thanks to a simple user-friendly structure, energy audit templates to collect information can easily be created from the library and used as a walk-through survey by auditors during their inspection and to easily identify potential cost-effective measures to improve energy



efficiency. [iBEMS architecture prototype](#): an integrated control system leverages the information and synergies among each of the systems (HVAC, lighting, refrigeration, energy use, etc.), as well as for building-correlated services (parking, RES harvesting and local energy production, etc.), making facility managers able to control energy generation, consumption and energy exchange with the grid.



## Webinar on Building Renovation Passports: presentations available

[The presentations and recording from the BPIE and Build UP webinar are now available.](#)

With the launch of the Clean Energy Package and the Energy Performance Certificates still lacking targeted recommendations for renovation, Building Renovation Passports could be one of the solutions to drive the renovation of the European building stock by providing tailor-made and understandable information to building owners and investors.

## EVENTS

### Workshop, Will the 'Clean Energy for All Europeans' package help in the fight against smog in Poland?, 28 February, Warsaw

This is the third BPIE workshop in Poland on improving the framework conditions for building renovation. The aim is to explore the role of the "Clean Energy for All Europeans" package on the renovation market, and in particular whether it does enough to address the country's smog problem. More on the registration [here](#). The event will be held in Polish only.

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## **Meet BPIE at the World Sustainable Energy Days (WSED), 1-3 March, Wels**

BPIE is a partner for this edition of the WSED, with three presentations:

- How ready is Europe for the “Smart Building Revolution”?, Maarten De Groot
- Demand side infrastructure for energy security, Filippos Anagnostopoulos / Dan Stanciaszek
- Boosting the NZEB market transition, Jonathan Volt

The full [conference programme](#) is now available.

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## **Heat Roadmap Europe workshop, 7 March, Brussels**

The Heat Roadmap Europe (HRE4) project organizes a workshop to share the latest findings and launch the Pan-European Thermal Atlas (Peta4). These high resolution thermal maps of 14 largest EU Member States (up to 90% of heat demand) and detailed profiles of heating and cooling demand in these countries will be presented, as well as related projects. The event is fully booked, but we invite you to join the waiting list. [Agenda](#).

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## **Internet of Energy Conference, 7-8 March, Cologne**

BPIE will speak about [“Intelligent urban ecosystems: Smart consumers, Smart buildings and Smart utilities”](#) on the second day of the conference. This session will offer a glimpse into the future smart city with debates on the role of buildings in transforming the energy system, cross-industry collaboration and how to build a “smart” strategy.

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## Energy Efficiency Global Forum (EE Global), 8-9 May, Washington D.C.

The Energy Efficiency Global Forum (EE Global) is turning 10 years. [EE Global 2017](#) is the one event where business executives, government leaders and advocates join together for two days of actionable dialogue and partnership-building. BPIE partnering with the event, we have a few invitations, [feel free to ask!](#)

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## Active House General Assembly and open event, 7 March, London

Ahead of the official General Assembly, the Alliance will organise an open conference within the overall Ecobuild theme to foster sustainable buildings. [The Active House conference](#) will focus on design and development of buildings that foster healthy and comfortable buildings for the occupants, presenting best practices from all around the world.

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### A few additional events where BPIE will speak

- [4th QUALICHeCK Conference | EPBD perspectives for compliant and smart buildings](#), 21 February, Brussels
- SolarPower Summit, [Global Market Forecasts, Policies and Technology Trends](#), 7 - 8 March, Brussels
- [Energy & Buildings](#), 24 March, Vaasa, Finland
- [22<sup>nd</sup> BIM Congress](#), 17-19 May, Madrid, Spain
- [CommONEnergy final conference and award ceremony](#), 7 September, Brussels



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