iBRoad2EPC

Bringing together Energy Performance Certificates and Building Renovation Passports

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Leonardo platform Webinar

This project has received funding from the European Union's HORIZON 2020 research and innovation programme under grant agreement No 101033781

iBRoad2EPC consortium

12 Partners from 9 countries

Project duration
from September 2021
to August 2024

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Core elements of the EPBD

ENERGY PERFORMANCE CERTIFICATE

- Disclose the energy and carbon performance of the property
- Prove compliance with minimum performance standards or green building requirements

MANDATORY MINIMUM PERFORMANCE STANDARD

- Mandatory renovation obligation of the worst performing buildings

NATIONAL BUILDING RENOVATION PLAN

- Establish building stock data
- Monitor progress
- Evaluate impact of policies and financial programmes

BUILDING RENOVATION PASSPORT

- Voluntary deep renovation advice
- Data to develop individual climate-proofing roadmaps

DIGITAL BUILDING LOGBOOK

- Repository of all building related data
- Contains information to enable low-carbon measures

How are the elements aligned?

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Tasks of EPC and BRP

EPC

- ✓Information on current energy performance
- ✓General renovation recommendations
- ✓Static document
- ✓Prove compliance with MEPS
- ✓Mandatory when building is constructed, sold or rented

iBRoad2EPC

- ✓ Information on current energy performance
- ✓ Customised long-term renovation plan to achieve deep renovation
- ✓ information on energy performance, comfort and additional specifications
- ✓ Step-by-step renovation measures to avoid lock-in (technical description)
- ✓ Renovation recommendations aligned with long-term energy saving target
- ✓ Renovation recommendations to fulfil MEPS in the future
- ✓ Online document
- ✓ Voluntary or mandatory

Building Renovation Passport

iBRoad Renovation Roadmap

- ✓Customised long-term renovation plan to achieve deep renovation
- ✓Detailed information on energy performance; comfort and additional specifications provided;
- ✓Step-by-step renovation measures to avoid lock-in (technical description and suggested timing);
- ✓Renovation recommendations aligned with long-term energy saving target
- ✓Renovation recommendations to fulfil MEPS in the future
- ✓Static or online document
- ✓Voluntary consultation

simplified

optional

simplified

simplified

simplified

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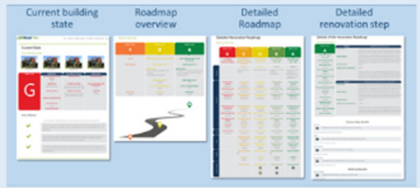
Placement of iBRoad2EPC

EPC

BRP



iBRoad2EPC

Implementing countries decide on the placement between EPC and BRP

Effort:

2 - 4 hours → 1,5 – 2 days

Price:

50 – 250 Euro → 1000 – 3000 Euro

Coverage:

5 – 15% of the building stock → obligatory → voluntary → several thousand buildings

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Fundamental questions

what?	Based on the on-site visit and together with the building owner, the issuer decides which building components or technical building equipment need to be renovated or renewed.
when?	Each implementing country defines the time steps so that they are aligned with relevant dates and intermediate targets in the national building strategy. The issuers decide which building component is to be renovated by which time step.
how?	Technical specifications of the renovation measures are automatically derived from the national building strategy (NECP, LTRS, NBRP). Issuers may override them if necessary.
what to beware of?	Building owners need information about legal obligations that their buildings will have to meet in the future. They are automatically displayed for each time step.
what to pay attention to?	iBRoad2EPC automatically fills in text blocks with technical tips and hints for a seamless connection of all renovation measures even if carried out at different times.

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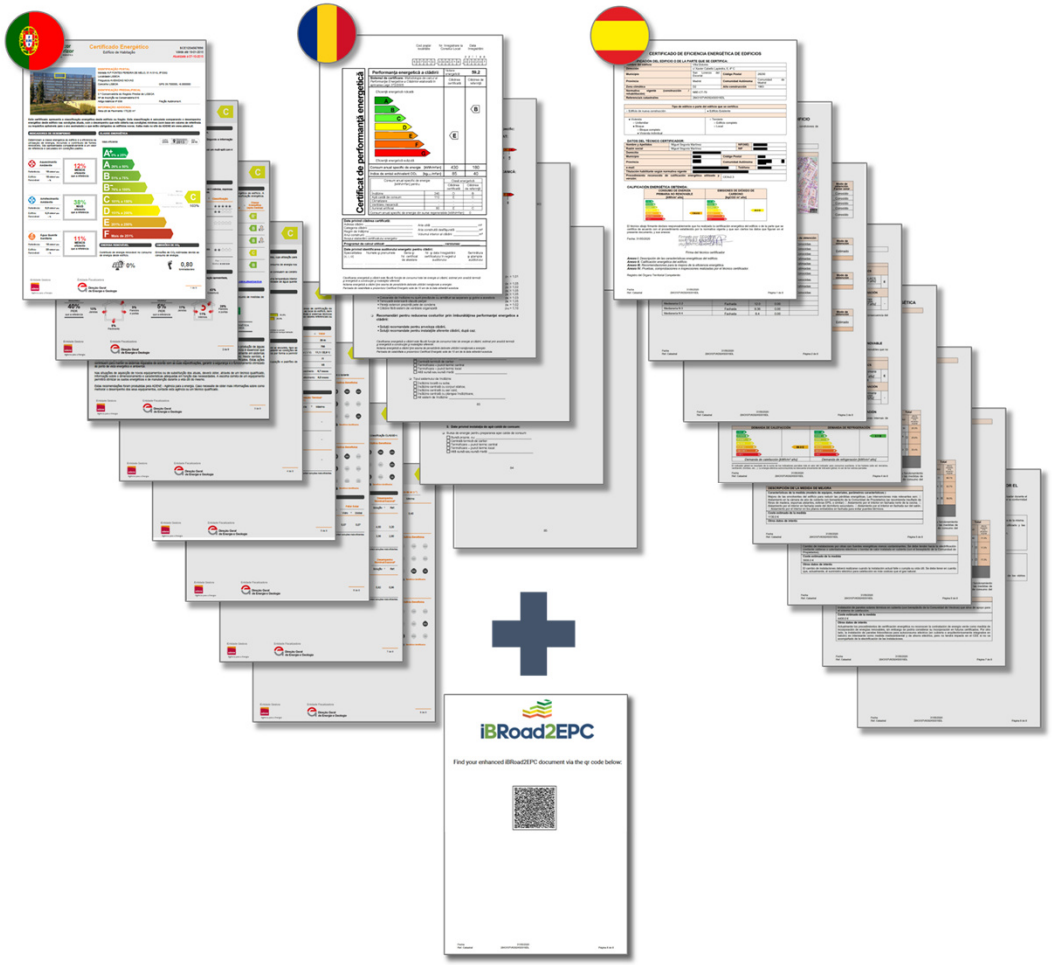
What is iBRoad2EPC?



- iBRoad2EPC comes as an **extra page** to the regular EPC with an individual URL and QR-code.

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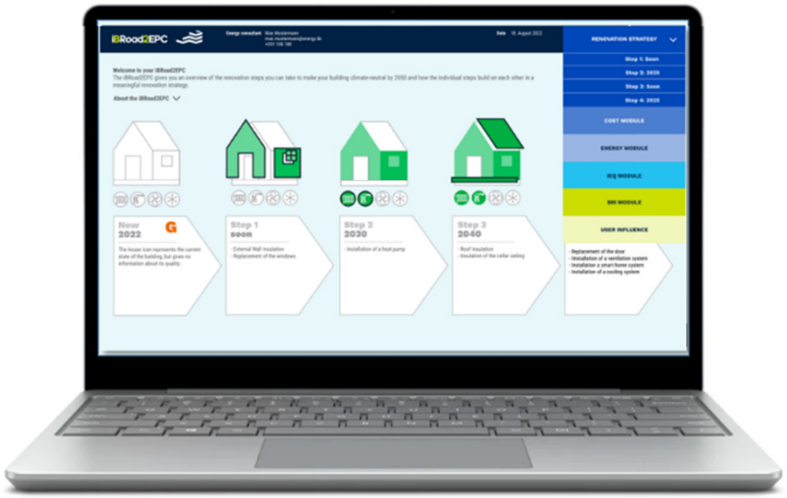
What is iBRoad2EPC?



- iBRoad2EPC is hosted online and thus can be adapted dynamically.
- iBRoad2EPC is an individual **energy consultation** for building owners, issued by trained building professionals.
- iBRoad2EPC outlines an initial **renovation strategy** on how a building can become climate neutral in the long term.

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Overview Page

Present building state
according to EPC

Step 1
Which renovation measures are pending?

Renovation steps
Support to meet all future requirements

Target state
Climate neutral building

House icons
Represent the quality of the envelop

Technology icons
Represent the quality of the technical equipment

Timing of renovation steps
According to climate targets

Brief description
of the renovation measures contained in the step

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Detail Page

Future Requirements
Information about content and timing

Preparation for later renovation steps
reach deep renovation and avoid lock-in

Description of the measures
What should be renovated?

Specification of the measures
Renovation depth according to NBRP

Icon
same as in the overview for easy orientation

iBRoad2EPC

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Date 18. August 2022

RENOVATION STRATEGY

Basic Module > Step 1

Step 1 **Soon**

Measure 1
External wall insulation

Description of the measure
The external wall is insulated with a "Exterior Insulation Finishing System (EIFS)". EIFS is a lightweight synthetic wall cladding that includes foam plastic insulation and thin synthetic coatings.

Specification of the measure
15 cm of insulation (U = 0,2 W/(m²K))

Measure 2
Replacement of the windows

Description of the measure
Replacement of all windows that are older than 10 years.

Specification of the measure
Triple glazing, highly efficient windows (UW = 0,8 W/(m²K).

MEPS/Regulations
By 1 January 2024, every ne[illegible] installed heating system is to be based on 65 percent renewable energ[illegible]s

Note/Recommendation
When the outer wall is being insulated, please prepare a low thermal bridge connection to a later pitched roof insulation. Existing panels at the eaves should be opened so that the insulation can be laid up to the upper edge of the rafters. At the verge, the insulation should be laid up to the upper edge of the gable wall. For this, the roof overhang must usually be extended.
When the outer wall is being insulated the control settings of the existing heat generator should be adapted to the reduced heat load. Your installer should check whether the flow temperatures and the flow rate of the heating circuit pump can be reduced.

When the outer walls are being insulated, please prepare for a later installation of a ventilation system by installing the outside wall openings for fresh and exhaust air shafts for the ventilation system in the wall insulation layer. Facade integrated ventilation units for single or multiple rooms are most easily installed in the same step as the wall insulation.

If you plan to install a heat pump in the future, please carry out preparation measures to lower the flow temperature of the heating systems (ideally below 55°C or less). This will raise the efficiency of the heat pump significantly. The flow temperature can be lowered by carrying out a hydraulic balance, exchanging single radiators and insulating single building components. An energy auditor can identify the components and radiators that provide the maximum improvements.

Back

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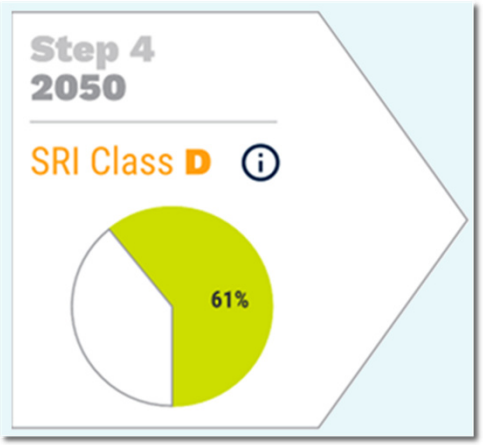
Modular enhancement

iBRoad2EPC can be extended flexibly with additional modules

- Energy demand, cost and GHG emissions
- Investment cost
- Indoor environment quality (IEQ)
- Smart readiness indicator (SRI)

Implementing countries decide which modules to include.



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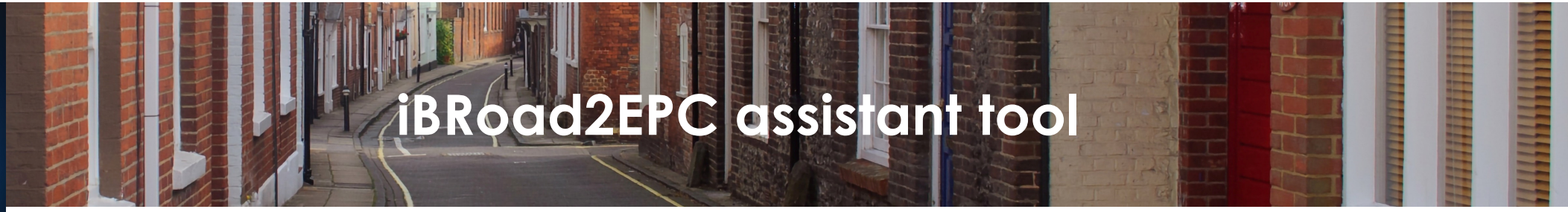

iBRoad2EPC assistant tool

Energy experts process and issue
iBRoad2EPC with an online assistant tool.

what?	description of measures	Issuer can choose from a measures menu
when?	Likely time span to implement measures	Issuer can assign measures to decades
how?	technical specifications according to LTRS, NBRP, NECP	Automatically aligned with national targets
why?	foreseeable obligations and objectives	Automatically inserted according to national legislation
What to beware of	notes to prevent log-in situations	Automatically derived from the order of measures

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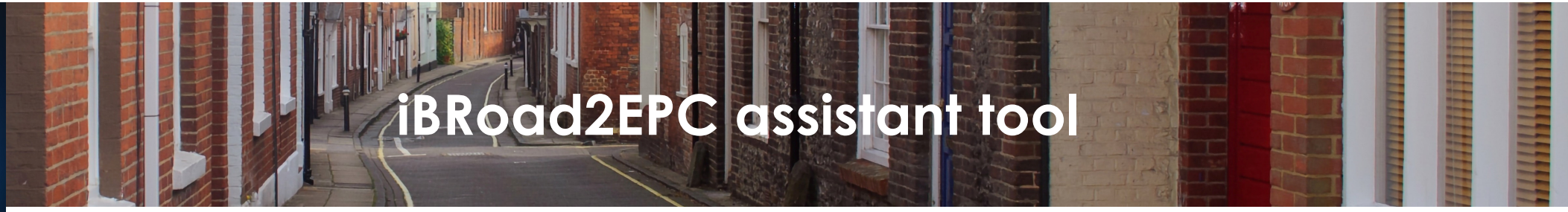

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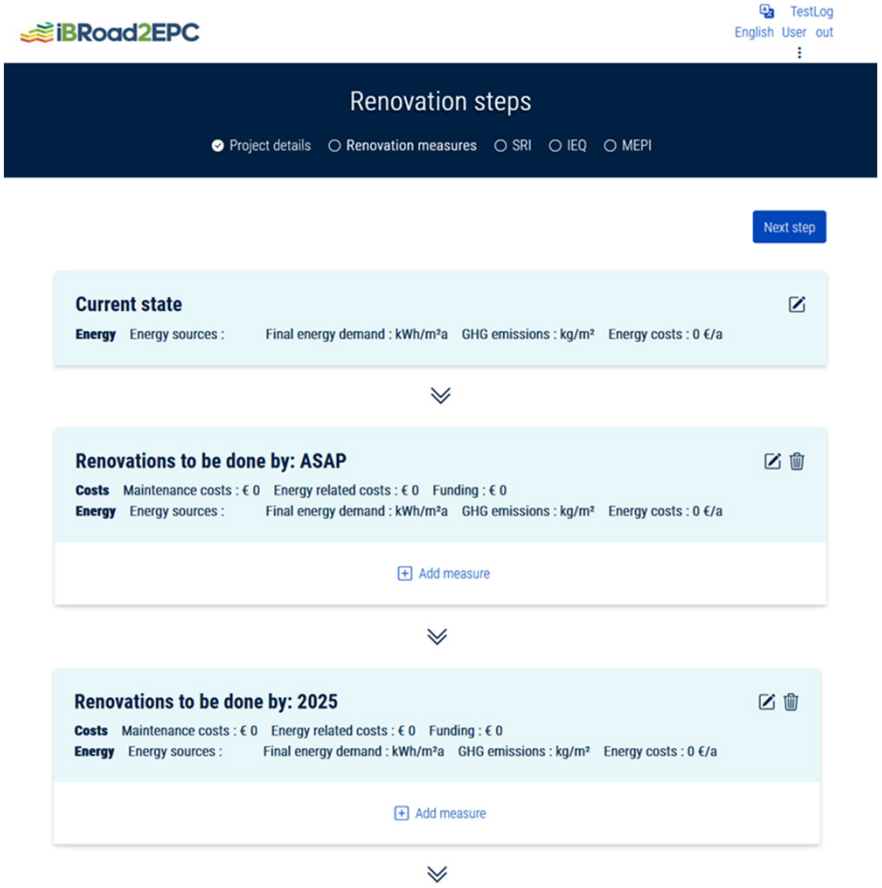

Notes to prevent lock-in situations

2. Heating - External air-water heat pump

Installation of an air-water heat pump. This uses outside air as a heat source. The outdoor unit of the heat pump is installed outdoors. Attention must be paid to the sound diffusion in the neighbourhood. The pipes are led into the heating room through openings in the outer wall. They must be well insulated. Heat pumps can also be used for cooling. The flow temperature in the heating circuit must be lowered as much as possible so that the heat pump can run efficiently.

Preparations for later renovations steps

Prepare for External insulation (ETICS System)

When replacing the heat generator, please prepare for later insulation of the exterior walls by selecting a heating capacity that is adjusted to the foreseen insulated state. This will allow you to buy a smaller, cheaper heat generator. This will increase its efficiency after the insulation measure.

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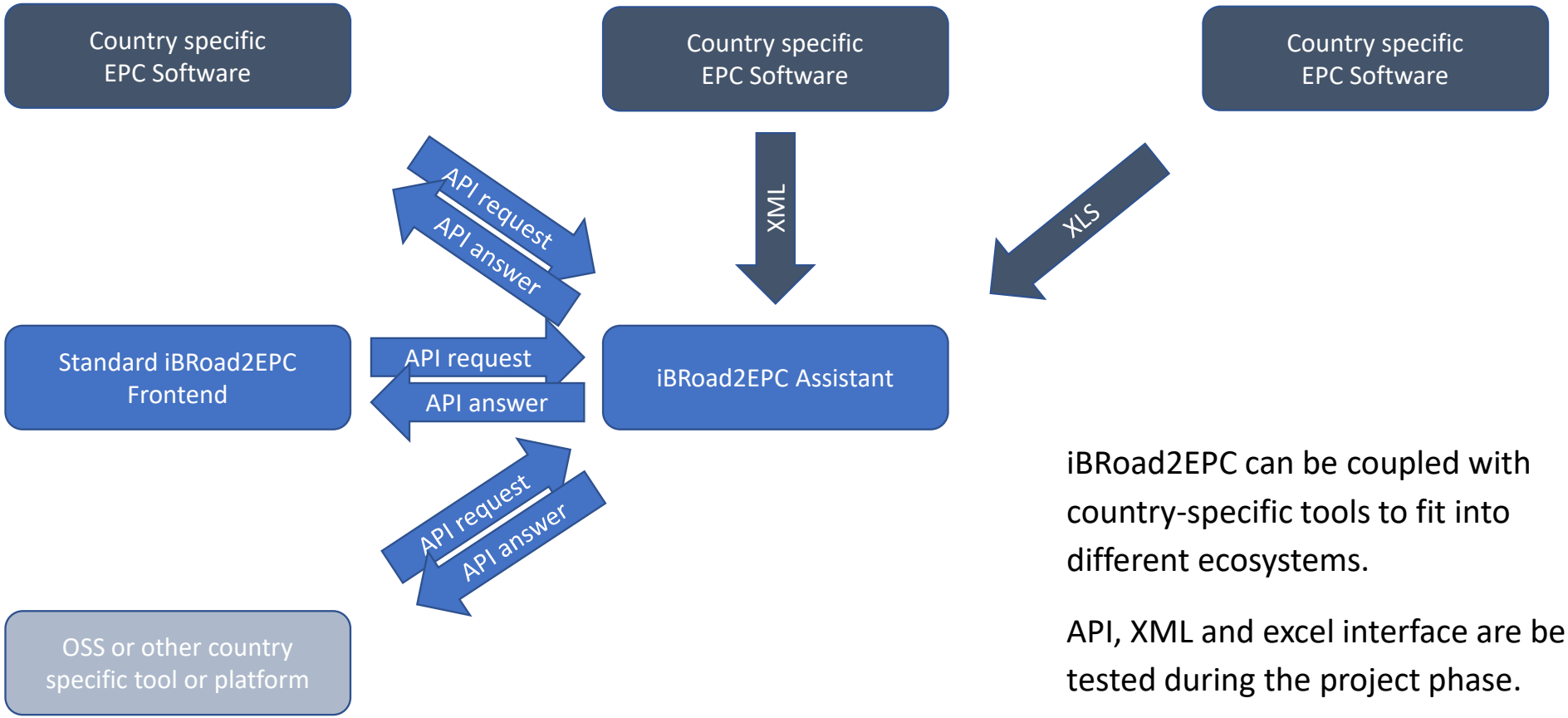
Coupling iBRoad2EPC with existing tools



iBRoad2EPC can be coupled with country-specific tools to fit into different ecosystems.

API, XML and excel interface are being tested during the project phase.

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Thank you for your attention

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For more information, please visit **www.ibroad2epc.eu**

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