

Financing decarbonisation via innovative economic instruments based on Circularity and Sufficiency

Financial instruments, economic incentives and drivers for a sustainable built environment

May 2022



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Contributors should not be considered to endorse the content of this report.

EXECUTIVE SUMMARY

Buildings use half of the raw materials and energy and one-third of the water in the EU. Rooted in cradle-to-grave thinking, they also generate a third of Europe's waste. In short, today's buildings are not fit for the future. Altering the status quo demands innovative policy-making across administrative levels and building lifecycle stages based on the principles of circularity and sufficiency.

Reaching the EU targets of a 60% reduction in CO₂ emissions and a doubling of renovation rates by 2030¹ will require more than a carrot-and-stick approach. Transformative financial mechanisms will play a crucial role on the road to net zero, as acknowledged in the revised Energy Performance in Buildings Directive²:

*"Member States shall provide appropriate financing, support measures and other instruments **able to address market barriers and stimulate the necessary investments in energy renovations in line with their national building renovation plan** and with a view to the transformation of their building stock into **zero-emission buildings by 2050**".*

TOWARDS A JUST AND SUSTAINABLE BUILT ENVIRONMENT

The EU will need to ensure that net zero transition facilitates environmentally and socially just livelihoods, considering the affordability, health and safety issues inherited from decades of urbanisation. A well-orchestrated policy mix will be essential for making these changes a reality.

The following report presents 22 instruments for much-needed change: financial schemes, economic incentives, setup examples and other tools for coordinated and multi-scale decarbonisation of the built environment in line with broader social and environmental aims.

Net-zero emissions buildings need to be managed across their lifecycle. Thus the proposed package aligns with the European standard EN 15978:2011³, circular economy thinking, one-step deep renovations approach and the SER⁴ frameworks by combining **sufficiency** and **circularity** policy instruments catalysed via supporting **facilitator** instruments.

SUFFICIENCY: LIVING WELL WITHIN LIMITS

Sufficiency policies help eliminate unnecessary energy, materials, land and water demand while enhancing wellbeing within the planetary boundaries⁵. They span beyond behavioural change and may, for example, include occupying empty buildings, promoting shared spaces or just space allocation. Sufficiency policy instruments prioritised within this report are presented below.

1 European Commission. Renovation Wave. Link: https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/renovation-wave_en

2 European Commission. Energy performance of buildings directive. Link: https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/energy-performance-buildings-directive_en

3 EN 15978:2011 Sustainability of construction works - Assessment of environmental performance of buildings - Calculation method. Link: shorturl.at/ioLV8

4 SER Framework is based on three intertwined pillars of Sufficiency, Efficiency and Renewables.

5 Saheb, Y. (2021). Sufficiency and Circularity. The two overlooked decarbonisation strategies in the 'Fit for 55' Package. Brussels, Belgium: European Environmental Bureau (EEB)

OPERATIONAL SUFFICIENCY INSTRUMENTS* (GEOGRAPHICAL SCOPE)

GRANT OF USE for COOPERATIVES (LOCAL)

LIVING SPACE BONUSES through ONE-STOP SHOPS (OSSs) (LOCAL)

MULTIFAMILY HOUSING TAX EXEMPTION (LOCAL)

ENERGY SUFFICIENCY via PROPERTY TAXATION (LOCAL)

ESG based BUILD TO RENT MORTGAGES (NATIONAL)

(NET) ZERO EMISSIONS BUILDING CATALYST POLICY (LOCAL)

CIRCULARITY: ENABLING SMARTER RESOURCE FLOWS

For the materials consumed, circularity policies help minimise the demand for raw materials and reduce solid waste throughout the life cycle of buildings. The financial schemes and economic incentives that can boost circular built environments are as follows:

OPERATIONAL CIRCULARITY INSTRUMENTS* (GEOGRAPHICAL SCOPE)

CIRCULAR BUILDING VALUATION (CROSS-CUTTING)

ADAPTABLE BUILDINGS (CROSS-CUTTING)

FLEXIBLE SPACES (CROSS-CUTTING)

ENVIRONMENTAL HIGH QUALITY STANDARD ACCREDITATION (EUROPEAN)

GREEN NEIGHBOURHOODS as a SERVICE (GNaaS) (LOCAL)

SERVITISATION: BUILDING PARTS AS A SERVICE (BPaaS) (CROSS-CUTTING)

While Operational Instruments are usually ready to use by themselves in the current market scenario, they would be more impactful and feasible once the Facilitator Instruments have been implemented.

FACILITATION: CATALYSING CHANGE

Facilitator Instruments are schemes and incentives that can support the implementation of sufficiency and circularity measures. They ease the application of the SER framework, one-step deep renovations and deep retrofitting of the built environment by enabling energy efficiency gains or the use of renewables to reduce the sector's operationally and embodied emissions.

FACILITATOR INSTRUMENTS (GEOGRAPHICAL SCOPE)
GREEN ECONOMY FINANCING FACILITIES (GEFFs) (EUROPEAN)
MORTGAGE FOCUS SHIFT (EUROPEAN)
LOCAL CLIMATE BONDS via CROWDFUNDING (LOCAL)
O.N-BILL SCHEMES (EUROPEAN)
DIFFERENTIAL ON-BILL REPAYMENT SCHEME (CROSS-CUTTING)
PROPERTY ASSESSED CLEAN ENERGY (PACE) PROGRAMS (CROSS-CUTTING)
ENERGY PERFORMANCE CONTRACTING (EPCs)
and ENERGY SERVICES COMPANIES (ESCOs) (CROSS-CUTTING)
ENERGY SERVICE AGREEMENTS (ESAs)
and ENERGY SERVICES COMPANIES (ESCOs) (CROSS-CUTTING)
ENERGIESPRONG RETROFIT (CROSS-CUTTING)
BUILT ENVIRONMENT ACCOUNTABILITY via BLOCKCHAIN TECHNOLOGY (CROSS-CUTTING)

PURPOSE MEETS CONTEXT

Every instrument can be seen at its best within a specific context. **Figure ES.1** outlines how instruments vary according to their feasibility, implementation level and potential impact. Further, scenarios have been developed to identify the most feasible and impactful instruments, as presented in **Figure ES.2**.

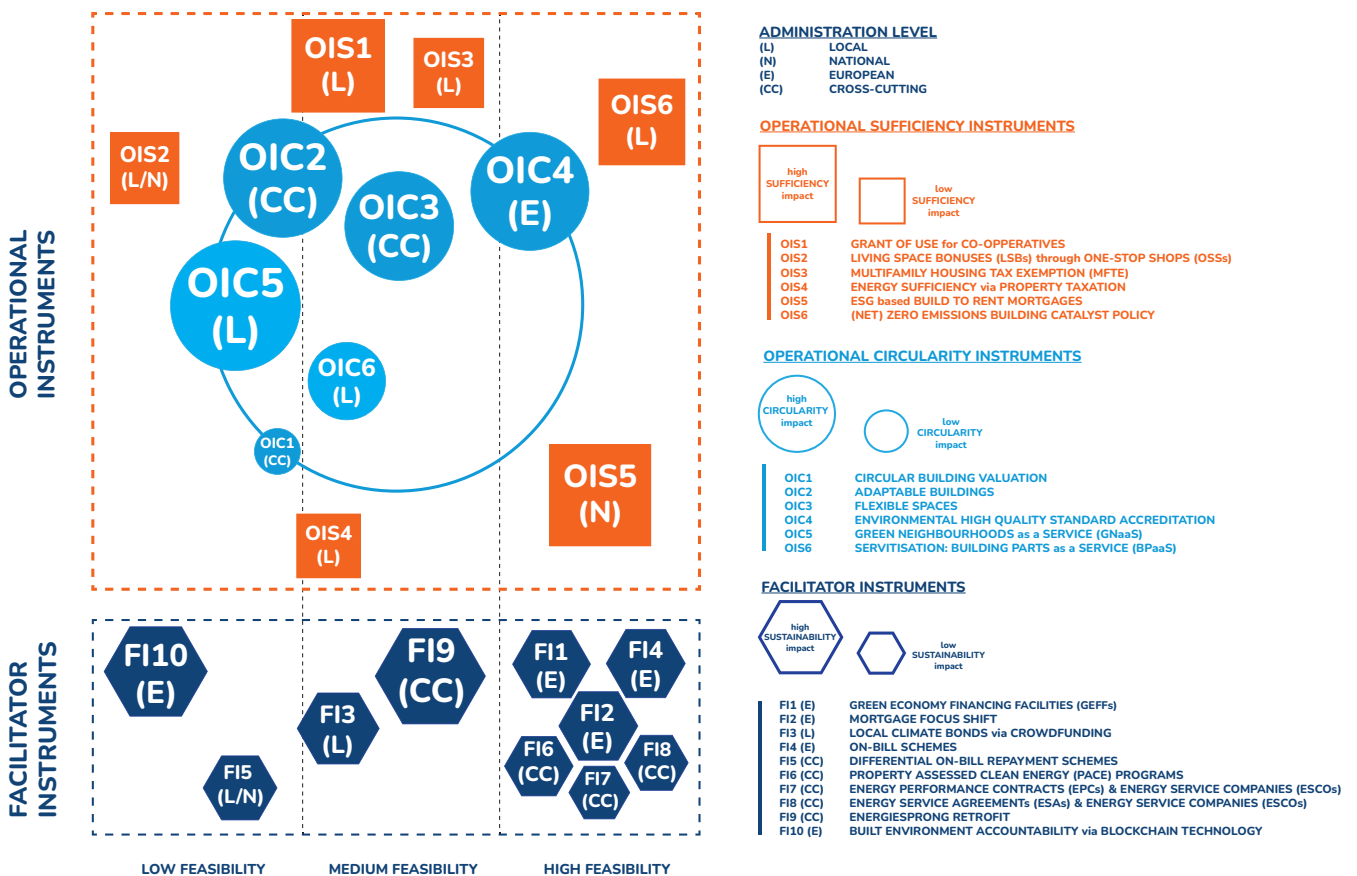
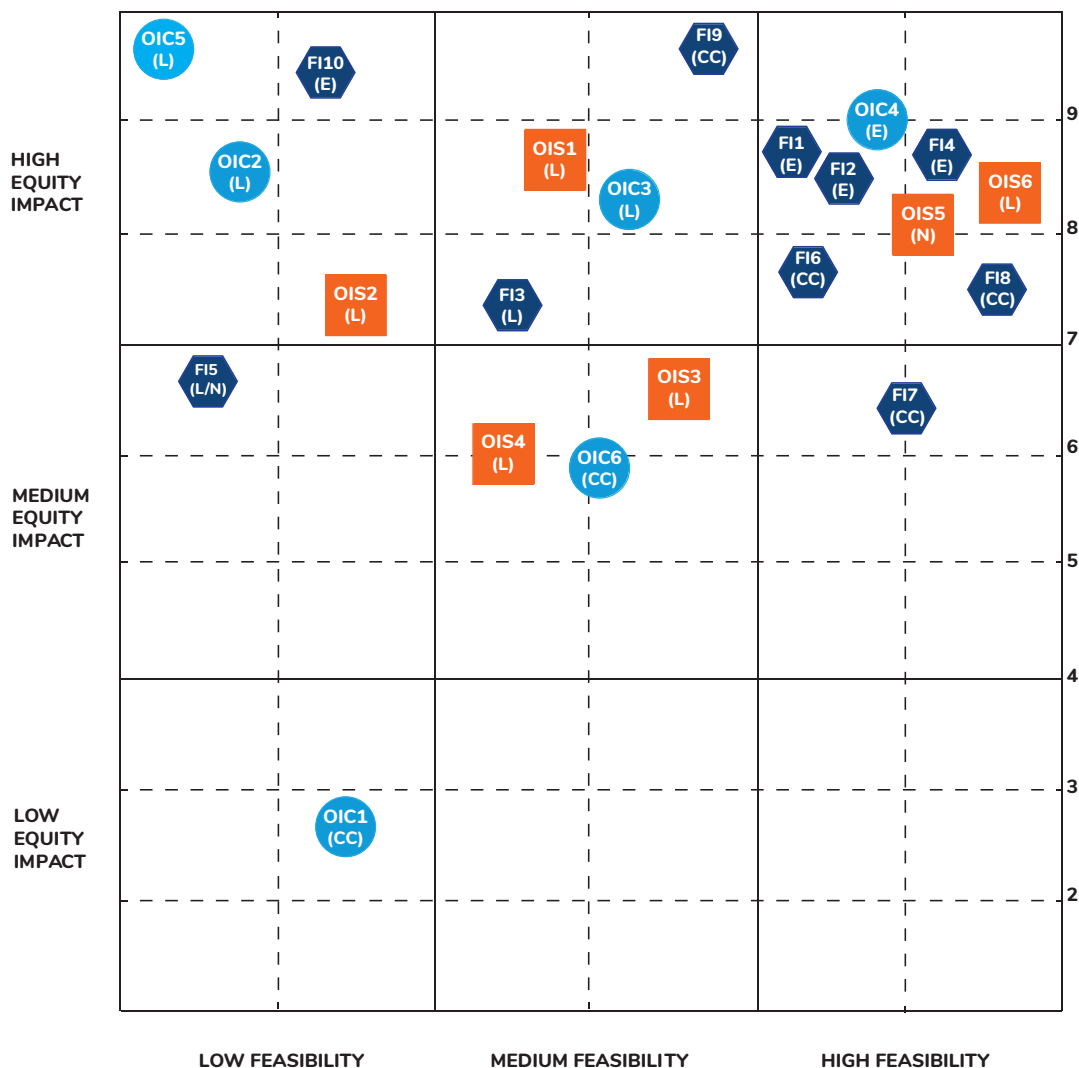


Figure ES. 1 Comparative assessment of all selected instruments according to their Sufficiency, Circularity and Facilitator capacity. Source: Own elaboration.



ADMINISTRATION LEVEL

- (L) LOCAL
- (N) NATIONAL
- (E) EUROPEAN
- (CC) CROSS-CUTTING

OPERATIONAL SUFFICIENCY INSTRUMENTS

- OIS1 GRANT OF USE for COOPERATIVES
- OIS2 LIVING SPACE BONUSES (LSBs) THROUGH ONE-STOP SHOPS (OSSs)
- OIS3 MULTIFAMILY HOUSING TAX EXEMPTION (MFTE)
- OIS4 ENERGY SUFFICIENCY via PROPERTY TAXATION
- OIS5 ESG based BUILD TO RENT MORTGAGES
- OIS6 (NET) ZERO EMISSIONS BUILDING CATALYST POLICY

OPERATIONAL CIRCULARITY INSTRUMENTS

- OIC1 CIRCULAR BUILDING VALUATION
- OIC2 ADAPTABLE BUILDINGS
- OIC3 FLEXIBLE SPACES
- OIC4 ENVIRONMENTAL HIGH QUALITY STANDARD ACCREDITATION
- OIC5 GREEN NEIGHBOURHOODS as a SERVICE (GNaaS)
- OIS6 SERVICISATION: BUILDING PARTS as a SERVICE (BPaaS)

FACILITATOR INSTRUMENTS

- F11 (E) GREEN ECONOMY FINANCING FACILITIES (GEFFs)
- F12 (E) MORTGAGE FOCUS SHIFT
- F13 (L) LOCAL CLIMATE BONDS via CROWDFUNDING
- F14 (E) ON-BILL SCHEMES
- F15 (CC) DIFFERENTIAL ON-BILL REPAYMENT SCHEMES
- F16 (CC) PROPERTY ASSESSED CLEAN ENERGY PROGRAMS (PACE)
- F17 (CC) ENERGY PERFORMANCE CONTRACTS (EPCs) & ENERGY SERVICE COMPANIES (ESCOs)
- F18 (CC) ENERGY SERVICE AGREEMENTs (ESAs) & ENERGY SERVICE COMPANIES (ESCOs)
- F19 (CC) ENERGIESPRONG RETROFIT
- F10 (E) BUILT ENVIRONMENT ACCOUNTABILITY via BLOCKCHAIN TECHNOLOGY

Figure ES. 2. Comparative assessment of all selected instruments according to the feasibility (low, medium or high) and socioeconomic impacts (1-10) used to construct the proposed scenarios. Source: Own elaboration.

The following instruments have been identified as the most promising based on their feasibility and positive impact on household equity, which include:

- OIS1 Grant of Use for Cooperatives
- OIS2 Living Space Bonuses through One-Stop Shops (OSSs)
- OIS4 Energy Sufficiency via Property Taxation
- OIS6 (Net) Zero Emissions Building Catalyst Policy
- OIC3 Flexible Spaces
- OIC4 Environmental High-Quality Standard Accreditation
- OIC5 Green Neighbourhoods as a Service (GNaaS).

Different potential combinations between the three types of instruments (see **Figures ES.3** and **ES.4**) represent realistic and achievable cross-cutting scenarios that can foster decarbonisation of the built environment over the short and medium/long term.

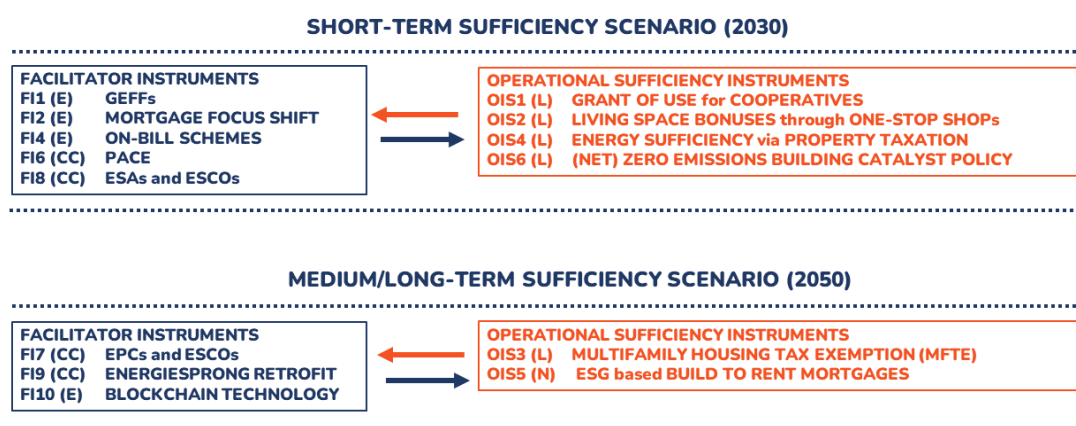


Figure ES.3. SUFFICIENCY SCENARIO. Different possible combinations between Operational Sufficiency Instruments and Facilitator Instruments aiming both, short term and medium/long-term decarbonisation goals Source: Own elaboration.

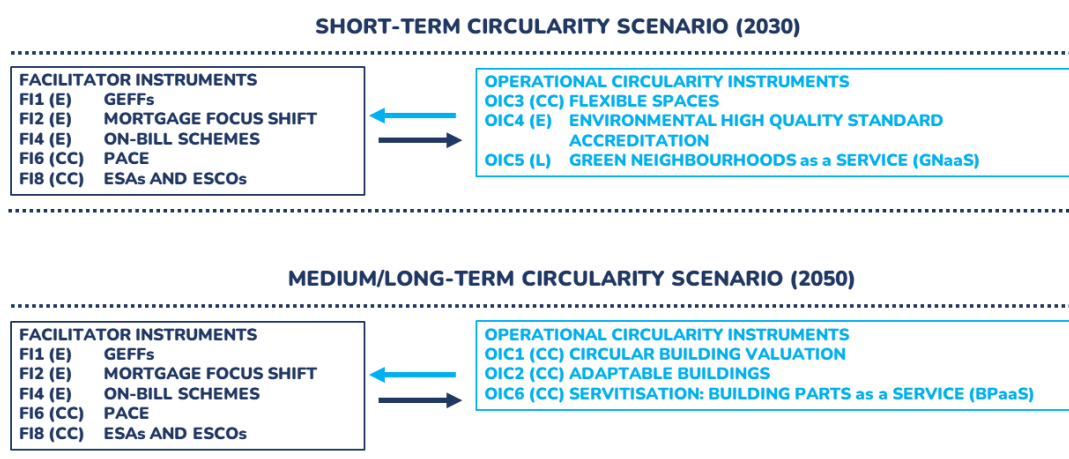


Figure ES.4. CIRCULARITY SCENARIO. Different possible combinations between Operational Sufficiency Instruments and Facilitator Instruments aiming both, short term and medium/long-term decarbonisation goals Source: Own elaboration.

POLICY RECOMMENDATIONS

Key policy recommendations based on report findings are as follows:

- Instruments for reducing operational emissions during the building use stage dominate current policies, requiring further research on sufficiency and circularity solutions to reduce embodied emissions while filling knowledge and implementation gaps.
- Local and regional authorities are the key players in decarbonising the built environment and must be involved in defining and articulating respective policies; local agencies should be focal points for one-step deep renovations.
- In setting up the ONE-STOP-SHOPS (OSSs), local agencies should be hubs of technical assistance and environmental awareness building of all user groups, including vulnerable households, via supporting their retrofit projects, promoting behavioural change, and engaging agents actors across the value chain.
- New business models promoting sufficiency should be reinforced with specific measures to enable new ways of living (such as co-living and housing cooperatives), supported by the updated regulatory framework at European and national levels to enable fiscal incentives that reward sufficiency in the building sector.
- Energy poverty prevention should be mainstreamed across the design and implementation of policies and programs to address distributional effects and ensure that the renovation wave does not negatively impact vulnerable groups.
- Blended and structured finance combining private and public investment through specific renovation or retrofitting schemes related to sufficiency, circularity and the SER framework should be reinforced.

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