New Housing Policy Challenges in the Era of Decarbonisation and Digitisation

*Insights from the new OECD report Brick by Brick II*

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*SUERF, 13 March 2024*
House prices fall in many countries, albeit after a long and steep surge

Real house price index, OECD average (2000=100)

Real house price inflation, 2023Q3 or latest available

Source: OECD Analytical House Price Indices.
Decarbonisation
Decarbonisation of the building sector requires strong action

OECD CO2 emissions by sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building construction</td>
<td>12%</td>
</tr>
<tr>
<td>Residential indirect</td>
<td>11%</td>
</tr>
<tr>
<td>Residential direct</td>
<td>6%</td>
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<tr>
<td>Other sectors</td>
<td>71%</td>
</tr>
</tbody>
</table>

Breakdown of global direct CO2 emission reductions in the buildings sector, by measure, IEA Net Zero scenario.

<table>
<thead>
<tr>
<th>Measure</th>
<th>2020</th>
<th>2030</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td></td>
<td>-51%</td>
<td>-97%</td>
</tr>
<tr>
<td>Mitigation measures</td>
<td></td>
<td></td>
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<tr>
<td>Behavior and avoided demand</td>
<td></td>
<td></td>
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<tr>
<td>Energy efficiency</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Electrification</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Hydrogen-based</td>
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<td></td>
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<tr>
<td>Bioenergy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other renewables</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Other fuel shifts</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Source: Chapters 1 and 2 of *Brick by Brick - Vol.2* using IEA data and projections.
Decarbonisation can be achieved in the face of strong energy needs

Residential CO2 emissions (bars) and energy use (dots)

Source: Chapter 2 of Brick by Brick - Vol.2 using IEA data and projections.
Carbon intensity depends on direct and electricity-generation emissions

Breakdown of residential energy consumption, 2020 or latest available data

Source: Chapter 2 of *Brick by Brick - Vol. 2* using IEA data and projections.
Carbon intensity has been the main driver of reductions in housing emissions.

Breakdown of total 2000-2020 changes in residential CO2 emissions

Source: Chapter 2 of *Brick by Brick - Vol.2* using IEA data and projections.
Electrification will keep being a key driver of housing decarbonisation.

Global final energy consumption by fuel

Source: Chapter 2 of *Brick by Brick - Vol.2* using IEA projections.
OECD countries apply extremely contrasted effective carbon rates to housing

Effective carbon rates for residential CO2 emissions, 2020 or latest available

Source: Chapter 2 of Brick by Brick - Vol.2 using OECD effective carbon rates.
Abatement costs are high for buildings

Marginal abatement costs in USD per ton of CO2 (bars) and quantitative potential in Gt of CO2 (numbers)

Source: Chapter 2 of *Brick by Brick - Vol.2* using Goldman Sachs International (2020)
Reducing CO2 emissions from residential buildings requires a mix of measures

<table>
<thead>
<tr>
<th>CO2 pricing</th>
<th>C02 regulation</th>
<th>Subsidies</th>
<th>Rental laws</th>
<th>Financial Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Examples</strong></td>
<td><strong>Advantages</strong></td>
<td><strong>Restrictions</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| - CO2 tax  
- ETS | - Boiler bans  
- Energy labeling requirements | - Insulation  
- Heat pumps  
- R&D | - Rent adjustments  
- Renovation decisions | - Transparency and comparability in green building labeling |
| ✓ Clear incentives | ✓ Direct effects | ✓ Strong support  
✓ Indispensable for basic R&D | ✓ Overcoming split incentives  
✓ Avoid stalling | ✓ Expansion of green real estate financing  
✓ Enabling the recognition of green loans |
| ❖ Insufficient due to market failures  
❖ Distribution effects in the first round | ❖ Economic costs  
❖ Distribution effects | ❖ Budgetary costs  
❖ Carrying costs  
❖ Deadweight costs | ❖ Possible resistance from tenants and cash-strapped owners | ❖ Potential rent seeking by banks |

Source: Chapters 1 and 2 of *Brick by Brick - Vol.2*
Change in the geography of housing demand in the wake of COVID-19
COVID and work from home change housing preferences

Teleworking will stay

New spatial balance between workplace and home
Access to strong economic and social activities, Greater Paris area.

Source: Update of “Will it stay or will it go? Analysing developments in telework during COVID-19 using online job postings data” (Adrjan et al., 2021).

Note: The accessibility of strong economic and social activities is expressed by the ability to reach 500 restaurants (usually near offices and recreational facilities) within 30 (50) minutes by car.
Disaggregated house price data - Paris region

Source: Demandes de valeurs foncières (DVF): https://www.data.gouv.fr/fr/datasets/demandes-de-valeurs-foncieres/
The price differential for residential real estate has flattened out on average within large metropolitan areas.
Policies can promote the shared benefits of the new residential geography and better urban environmental conditions

<table>
<thead>
<tr>
<th></th>
<th>Reform of spatial planning and land use</th>
<th>Reform of the rental regulations</th>
<th>Shifting the taxation of wealth</th>
<th>Support for digitization</th>
<th>Drawing up land value increases</th>
<th>Construction of social housing in high-quality areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Examples</strong></td>
<td>Increasing the flexibility of regulations, in particular densification</td>
<td>More balanced and flexible rental rules</td>
<td>From transaction taxes to recurring taxes</td>
<td>Provision of high-speed Internet</td>
<td>Use of mechanisms for recording the value of land</td>
<td>Provide public housing and affordable housing in areas that will benefit from environmental improvements.</td>
</tr>
<tr>
<td><strong>Advantages</strong></td>
<td>Closes the offer on Brakes the price increase Reduces the risk of urban sprawl</td>
<td>Facilitates mobility</td>
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<td>Reducing the digital divide</td>
<td>Prevents speculation and better distribution of profits</td>
<td>Facilitates access to high environmental quality</td>
</tr>
<tr>
<td><strong>Restrictions</strong></td>
<td>Vulnerable to political-economic headwinds</td>
<td>May put low-income tenants at risk</td>
<td>May require compensatory measures</td>
<td>Costly for governments and/or employers</td>
<td>Can be complex</td>
<td>Causes budgetary costs</td>
</tr>
</tbody>
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Source: Chapters 1 and 4 of Brick *by Brick: Better Housing Policies - Volume II.*
THANKS!

http://www.oecd.org/Housing/

JUST RELEASED

Brick by Brick (Volume 2)
Better Housing Policies in the Post-COVID-19 Era