Evaluating instruments stimulating sustainability transitions: promoting biomass boilers in Germany and the UK

10th March, 2021
Energy Evaluation Europe 2021

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Agenda

1. Research question
2. Method
3. Some key results
4. Conclusion
**Research Question**

<table>
<thead>
<tr>
<th>Primary purpose and type</th>
<th>MAP (Germany)</th>
<th>Domestic RHI (UK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand pull - Economic instrument (upfront investment subsidy)</td>
<td>Demand pull - Economic instrument (feed-in tariff for 7-years post-installation)</td>
<td></td>
</tr>
<tr>
<td>Period active</td>
<td>In place since 1999. No scheduled end date</td>
<td>Launched April 2014. Funding committed until March 2022</td>
</tr>
<tr>
<td>Budget</td>
<td>€210.6 million (2017)</td>
<td>£90 million (€102 million) in 2016-2017</td>
</tr>
<tr>
<td>Target scope</td>
<td>Existing &amp; new buildings</td>
<td>Existing buildings</td>
</tr>
</tbody>
</table>

“How do the key economic instruments promoting the uptake of small-scale biomass boilers in existing residential dwellings compare between Germany and the UK?”
Method

- Review of academic and grey literature as well as semi-structured expert interviews
Key Result 1: 'Dirty' biomass

Stringency – “The ambition level of an instrument with respect to its innovative push; the greater the stringency, the greater the incentive to change”

<table>
<thead>
<tr>
<th></th>
<th>Particulates upper limit</th>
<th>CO upper limit</th>
<th>NOx upper limit</th>
<th>Minimum efficiency (LHV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAP</td>
<td>20mg/m³</td>
<td>200mg/m³</td>
<td>500mg/m³</td>
<td>89%</td>
</tr>
<tr>
<td>Domestic RHI</td>
<td>130mg/m³</td>
<td>1,000mg/m³</td>
<td>640mg/m³</td>
<td>75%</td>
</tr>
</tbody>
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MAP places an emphasis on promoting innovation
- Higher subsidies for boilers with condensation technology and secondary particulate separation

UK performed poorly with respect to stringency
- Possible consequence: Proposed ban of biomass boilers from gas-connected urban areas in 2018
Key Result 2: Predictability

Predictability – “The degree of certainty associated with an instrument and its future development for impacted stakeholders”

United Kingdom

- Error in setting the original tariff level
- Inflexible instrument design - time-consuming parliamentary approval required for scheme modifications
Key Result 2: Predictability, cont.

Predictability - “The degree of certainty associated with an instrument and its future development for impacted stakeholders”

Germany

- 17 changes to the funding amounts or eligible technologies between 2001-2012
- Funding shortage in 2006 & 2010
Key Result 3: Challenges for uptake in the UK

Level of support in UK is significantly higher, but uptake is 10 times lower. Why?

Possible barriers:

• **Lack of awareness** - Between 2015 and 2017 only 18% of homes off the gas grid were aware of the Domestic RHI

• **Upfront cost barrier** - Upfront cost was a key concern for 62% of Domestic RHI applicants

• **Competition within the scheme** – comparatively much higher subsidy support for heat pumps
Conclusion

“How do the key economic instruments promoting the uptake of small-scale biomass boilers in existing residential dwellings compare between Germany and the UK?”

Some key results:

1. Higher stringency in Germany than UK – greater innovative push
2. Lack of predictability in both countries impacted uptake
3. There are challenges for biomass boiler uptake in the UK even though level of support significantly higher