ESRI Research Bulletin

Is there a fairer way to finance energy subsidies?

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This Bulletin summarises the findings from: Niall Farrell, Seán Lyons, Who should pay for renewable energy? Comparing the household impacts of different policy mechanisms in Ireland, 2015. *Energy Research & Social Science*, 7, p.31-42

Is there a fairer way to finance energy subsidies?[1]

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In many countries, governments subsidise particular forms of energy to support environmental, security or social goals. Ultimately, energy consumers or taxpayers must pay for such subsidies. In this bulletin, we focus on how such subsidies are recovered from Irish consumers rather than the merits of the subsidies themselves. Ireland currently subsidises renewable energy, peat generation and a number of generators commissioned when demand was close to exceeding supply. The Public Service Obligation (PSO) levy is a charge included in all Irish electricity bills to raise this money. At the moment, all households are charged the same flat-rate amount. This came to €64.37 for each household for the 12-month period of October 2014–September 2015.

There are other ways in which each household could be charged[1]. This paper compares the current approach, where each household is charged the same amount, to one where each household would pay in proportion to its electricity use. We focus on the welfare impact of these alternative charging structures. As each household has a different income level, different PSO levy structures will have a different impact on each household's welfare.

We use Ireland's Household Budget Survey, which contains information on income and electricity usage, to simulate the impact different PSO charging schemes may have on the welfare of each household in Ireland. We can use this information to see how household-level burdens are distributed across income groups and social groups.

When the current flat-rate charge is in place, all households pay the same amount. However, the burden of this cost, or cost relative to income, is greater for poorer households. As a result, the welfare of a poorer household is more negatively affected than the welfare of a richer household.

[1]This Bulletin summarises the findings from: Niall Farrell, Seán Lyons, Who should pay for renewable energy? Comparing the household impacts of different policy mechanisms in Ireland, 2015. *Energy Research & Social Science*, 7, p.31-42 http://dx.doi.org/10.1016/j.erss.2015.02.006

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[1] It should be noted that a suitable legal framework is a pre-requisite for putting in place each of the levy designs discussed in this paper. EU legislation states that consumption-based PSO levies should not be imposed on imported producers, when the benefit of such a levy is granted to national producers only. Imposing a flat rate levy has been deemed as an acceptable means to overcome this requirement. An appropriate legal justification may also be required in order to put a unit-based policy in place. Alternate policies may also be employed to ensure that no discrimination exists against imports. These are practical steps which policymakers may need to follow when establishing an electricity consumption based charge.

When the amount charged to each household is in proportion to its electricity usage, heavy electricity users are charged more. As wealthier households tend to use more electricity, this results in wealthier households paying a greater share of the total subsidy. The average charge falls for low income groups and rises for high income groups. Because electricity tends to represent a higher proportion of a poor household's income and a lesser proportion of a rich household's income, using a proportional charge rather than a flat rate would reduce the average burden for low income groups and increase the burden for high income groups. The reduction in average burden for low income groups is greater than the increase in average burden for high income groups.

However, some low-income households use more electricity than others, and these higher-using households might lose out if charges were set in this way. Low income households with many inhabitants are more likely to be negatively affected by a switch to proportional charges, as are low income households headed by students or employed persons. Low income households headed by retired persons are less likely to be negatively affected.

Social welfare benefits may relieve many of these negative effects on poorer households. Ireland's Households Benefits Package (HBP) is one such measure. The HBP contains a free electricity allowance to help certain vulnerable socioeconomic groups (e.g. retired persons, carers and those with certain disabilities and illnesses) with household electricity or gas costs. If the PSO cost were covered as part of the HBP, vulnerable social groups would be shielded from changes in the PSO levy. Indeed, this was how the Irish HBP was designed prior to Budget 2013.

When we compare welfare impacts with and without support in the HBP, we find that low-income groups are the greatest beneficiaries of the HBP. However, it does not exclusively help those that are most negatively affected by a PSO levy. This is because many HBP beneficiaries are in middle-income groups. A social transfer mechanism that explicitly took household income and size into account might be more efficient than the HBP at targetting those most negatively affected by the PSO levy and other flat-rate contributors to electricity charges.

This paper shows that the existing flat-rate PSO levy places a greater burden on low-income households than an alternative levy made proportional to electricity usage. A charge that is proportional to electricity use increases the cost faced by heavy electricity users. Although these are more likely to be in higher income groups, some are in low income groups. Social transfer mechanisms can help offset the increased burden for households in low income groups, and there may be scope to improve the targetting of such measures.