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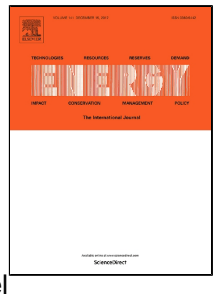

Expert perceptions of low-carbon transitions: Investigating the challenges of electricity decarbonisation in the Nordic region

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Expert perceptions of low-carbon transitions: Investigating the challenges of electricity decarbonisation in the Nordic region

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Abstract: The five Nordic countries of Denmark, Finland, Iceland, Norway and Sweden have perhaps the most aggressive and progressive climate, energy, and electricity policies in the world. This study asks: what are the greatest challenges to achieving the region's low-carbon goals in the domain of electricity? To provide an answer, the authors conducted 227 semi-structured interviews with 257 participants from 201 institutions across seventeen cities within the Nordic region. Those interviewed represent a diverse array of stakeholders involved with electricity technology, policy and practice. Although respondents identified 40 distinct electricity challenges, the integration of renewables was by far the most frequently mentioned (14.5%) of the expert sample. Five other challenges were also mentioned the most frequently by respondents: electrification of transport and other sectors (10.6%), managing intermittency (8.8%), carbon intensity (8.4%), supporting local grids (8.4%), and adequate capacity (8.4%). Interestingly, items such as energy efficiency, consumer awareness, industry, energy security, and public opposition were mentioned by only 1.8% (or less). The article concludes by what this heterogeneity and prioritization of challenges means for future Nordic research and policy.

Keywords: low-carbon electricity supply; Denmark; Finland; Iceland; Norway; Sweden