C. REGIONAL CONTRASTS IN EMISSIONS FROM FOSSIL FUELS

5.12 In a nation as vast as Canada, it is scarcely surprising that there are huge differences in the levels of greenhouse gas emissions from one part of the country to another. The most obvious contrasts depend on population density. As the witness from the Government of the Northwest Territories reminded us, in the Territories

> [O]ur annual per capita production of CO_2 from the combustion of fossil fuels was estimated at 26.1 tonnes, relatively high in comparison with southern Canada. This is primarily a reflection of the distance between our communities, our long, cold winters, and our reliance on diesel fuel to produce electricity...
>
> Although our per capita production of greenhouse gases is high, our total contribution is low.....[I]f a national carbon dioxide emission reduction target is established, we would like to see options developed to determine what share of such a market would be the responsibility of each jurisdiction.[8]

5.13 If the North emits disproportionate amounts of CO_2 from diesel fuel, it avoids the urban smog associated with nitrous oxide and other greenhouse gases in the Windsor–Quebec axis. Less apparent, but perhaps even more important, are the potential problems arising from the major differences in electricity generation across the country. Figure 15 summarizes the main forms of electricity generation, by percentage of total gigawatt hours (GWH) generated in 1986 in each province and the territories.

5.14 The potential differences in impact of efforts to limit global warming on the individual Canadians who are served by the electrical utilities is considerable. Newfoundland, Quebec, Manitoba and British Columbia are all heavily reliant (>90% of electricity consumption) on hydropower. Alberta generates over 90% of its electricity from coal, and Nova Scotia and Saskatchewan are also heavily coal-dependent. New Brunswick (and therefore Prince Edward Island which imports its electricity from New Brunswick) and Ontario depend on nuclear sources to meet a substantial proportion of their electricity needs (more than half in Ontario in the near future).

5.15 It is easy to see from Figure 15 why the prospects of strong policies to shift Canadian energy use away from fossil fuels get a different reaction in different parts of the country, and it is also easy to see that the issue could be a divisive one. As the president of TransAlta noted

> [W]e are very concerned about talk of a carbon tax because it could fall disproportionately on Alberta. .. We would think that taxes, if introduced, should be applied to all greenhouse gas emissions and perhaps to waste from other energy forms as well, including perhaps even spent uranium fuel, to keep the total social costs in front of utility managers.[9]

5.16 It is clear that, in regard to electricity generation, a carbon tax would indeed fall disproportionately on Alberta, and on the other provinces that rely heavily on coal as a source of electricity. How is this dilemma to be resolved equitably? TransAlta's recommended approach, a much more enlightened one than we heard from other fossil fuel users in similar positions, put heavy stress on technical methods, but also envisages tradeable emission permits and emission taxes.

5.17 Another regional contrast that needs to be considered in developing global emission policies is that between Alberta and Nova Scotia. Both are heavily coal-dependent in electricity generation, but whereas electric residential heating is common in Nova Scotia, it scarcely exists in Alberta.[10]