DECLARATION

A version of the material in Chapter 3 co-authored with Professor Andrew Leigh is forthcoming in the *American Economic Journal: Macroeconomics*. My contribution to the material in Chapter 3 is 80 percent. Otherwise, this thesis is my own work.

Paul Burke

July 2010
I thank my supervisor, Professor Raghbendra Jha, for his excellent supervision of my Doctor of Philosophy (PhD) research. Professor Jha has encouraged me to extend my research in directions that have proved to be interesting and fruitful. I also thank the other members of my PhD committee, Professor Andrew Leigh and Dr. David Stern, for their support and feedback on my work.

As noted in the Declaration, a version of Chapter 3 is forthcoming in the *American Economic Journal: Macroeconomics*. I acknowledge Professor Andrew Leigh’s contributions to the material in Chapter 3. A sole-authored version of Chapter 4 has recently been published in *Energy Economics* (Burke 2010).

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This thesis presents four papers on impacts of economic growth. The results indicate that faster economic growth improves the short-run political survival prospects of national leaders in both democracies and autocracies, and reduces the short-run likelihood of democratic change. Results also indicate that long-run economic growth sees countries climb an “electricity ladder”, substituting away from hydroelectricity and oil-fired electricity and toward electricity generated using coal and natural gas, and finally to nuclear power and modern renewables such as wind power. The extent to which countries climb the electricity ladder as they develop is a function of indigenous energy resources: countries with large endowments of hydro potential or fossil fuels are less likely to adopt nuclear power and modern renewables than otherwise similar countries. Countries that climb to the upper rungs of the electricity ladder are far more likely to experience environmental Kuznets curve-type downturns in carbon dioxide emissions. The results have important implications for actors who wish to encourage political change, and for climate change mitigation action.
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<th>Full Form</th>
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<tbody>
<tr>
<td>C</td>
<td>Celsius</td>
</tr>
<tr>
<td>CDIAC</td>
<td>Carbon Dioxide Information Analysis Center</td>
</tr>
<tr>
<td>CIRI</td>
<td>Cingranelli-Richards</td>
</tr>
<tr>
<td>CO₂</td>
<td>Carbon dioxide</td>
</tr>
<tr>
<td>DRI</td>
<td>Development Research Institute</td>
</tr>
<tr>
<td>EIA</td>
<td>Energy Information Administration</td>
</tr>
<tr>
<td>EKC</td>
<td>Environmental Kuznets curve</td>
</tr>
<tr>
<td>F1</td>
<td>Fuller 1</td>
</tr>
<tr>
<td>GDI</td>
<td>Gross domestic income</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross domestic product</td>
</tr>
<tr>
<td>I$</td>
<td>International dollars</td>
</tr>
<tr>
<td>IEA</td>
<td>International Energy Agency</td>
</tr>
<tr>
<td>IFS</td>
<td>International Financial Statistics</td>
</tr>
<tr>
<td>IV</td>
<td>Instrumental variable</td>
</tr>
<tr>
<td>LPM</td>
<td>Linear probability model</td>
</tr>
<tr>
<td>MWh</td>
<td>Megawatt hours</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>OLS</td>
<td>Ordinary least squares</td>
</tr>
<tr>
<td>OPEC</td>
<td>Organisation of the Petroleum Exporting Countries</td>
</tr>
<tr>
<td>PhD</td>
<td>Doctor of Philosophy</td>
</tr>
<tr>
<td>PPP</td>
<td>Purchasing power parity</td>
</tr>
<tr>
<td>REGTRANS</td>
<td>Regime transition variable</td>
</tr>
<tr>
<td>St. dv.</td>
<td>Standard deviation</td>
</tr>
<tr>
<td>t</td>
<td>Tonnes</td>
</tr>
<tr>
<td>tt</td>
<td>Thousand tonnes</td>
</tr>
<tr>
<td>ttoe</td>
<td>Thousand tonnes of oil equivalent</td>
</tr>
<tr>
<td>US</td>
<td>United States</td>
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