

Energy on different scales: the case study Norderön – Jämtland – Sweden

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An important feature in energy evaluations, in fact a key part, is the treatment of different hierarchical levels. Any energy investigation almost always relate to the national level, in order to have an appropriate energy per money ratio to use in the local or regional evaluation. If a regional energy to money ratio is available that one can be used instead, but this is rarely the case. All investigations also relate to the planetary baseline of the biosphere. The biosphere is the only hierarchical level where the ecosystem boundary forms an almost closed system to matter. Only solar energy and lunar gravity energy passes the systems border in significant amounts. However, even if relating different hierarchical levels is normal business in energy accounting, it has not been common to more in depth analyze the relationships between hierarchical levels.

With the purpose to investigate the hierarchical relationships more in depth, a case study is being formed with three hierarchical levels:

1. Norderön - a small island in Lake Storsjön with approximately 140 inhabitants on 773 ha (Figure 1).
2. Jämtland county - a region in the middle of Sweden
3. Sweden.

Based on traditional energy evaluations for these three levels, the case study will try to more in depth describe the interrelationships between the levels, and find appropriate indicators and frameworks that will best capture the hierarchical interdependencies (Figure 2). The next hierarchical level to include is likely to be the European Union, and thereafter the biosphere. This is however out of the scope for this first investigation.



Figure 1. Norderön, a small island in Lake Storsjön, which is located in the middle of Jämtland County, a county in the middle of Sweden. Maps published under Creative commons licence.

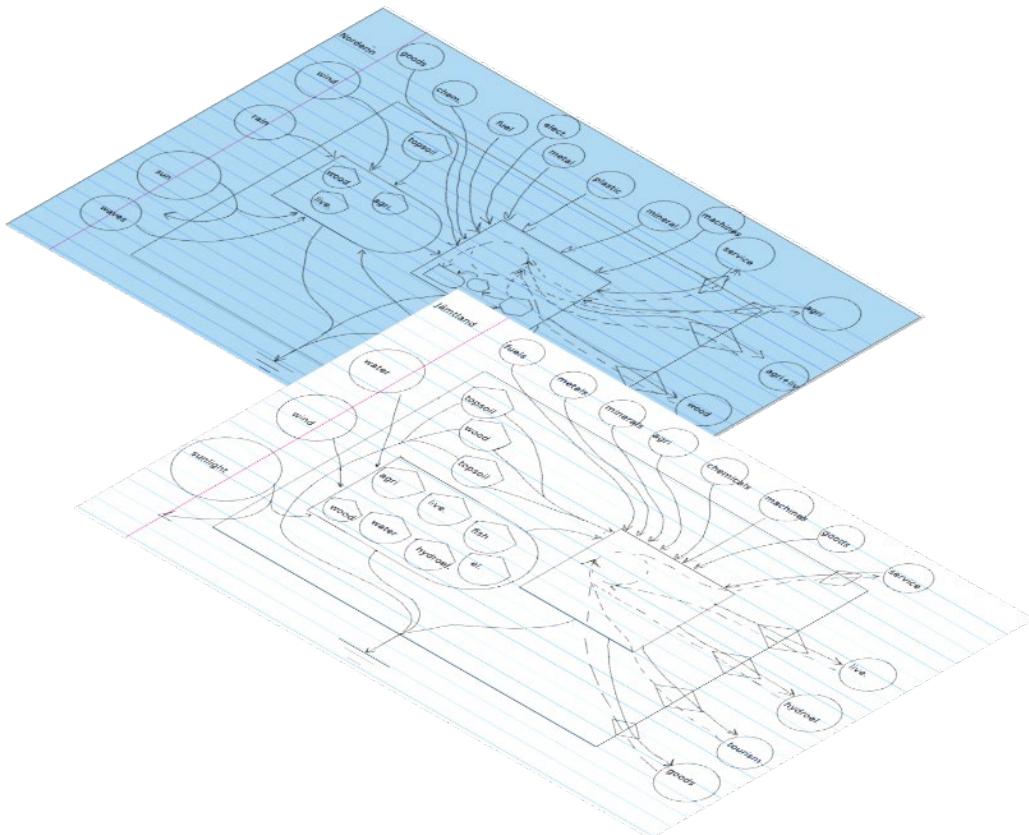


Figure 2. Preliminary system diagrams for Norderön and Jämtland County. Diagrams by Daniel Hedin.

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