



Energy Quarterly

News and analysis on materials solutions to energy challenges
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MRS Bulletin



Learning from energy initiatives conducted in different regions of the world

Exciting and far-reaching experiments in sustainable energy have been conducted for the last 100 years in many parts of the world. Many of the initiatives work in their respective regions because of the availability of raw products or intense political will, as seen in Germany's solar effort and France's nuclear policy. Others result from the need to be self-reliant, such as the Brazilian effort to produce ethanol with their plentiful sugarcane crop and the Danish efforts to harvest off-shore wind. Many of these experiments have been carried out at a large scale with the goal of producing more than 10–30% of the regions' energy needs.

The Regional Initiative section in the ENERGY QUARTERLY aims to bring the most significant of these experiments to the *MRS Bulletin* readership. Each section will strive to present the interplay among the economic, public policy, and engineering challenges, and show how solutions were achieved or attempted. Our approach is to present the underlying science behind the engineering challenges and identify the materials issues that may offer solutions. Furthermore, the impact of each of these initiatives will be discussed in the context of the original goals (e.g., reducing greenhouse gases, reducing dependence on oil, energy security, or creating jobs).

We leave it to the reader to judge the success and value of each initiative, as such an evaluation depends on the context. Most importantly, we hope that these initiatives will inspire members of the materials community to exploit the best practices from these initiatives, measure the initiatives against their own needs, adopt what is appropriate for their regions, and plan additional "experiments" that advance our energy portfolio even further.

Steve M. Yalisove and Elizabeth L. Fleischer