

Energy : The Governor of Tommorrow's world

Harvesting, Storing and Recycling

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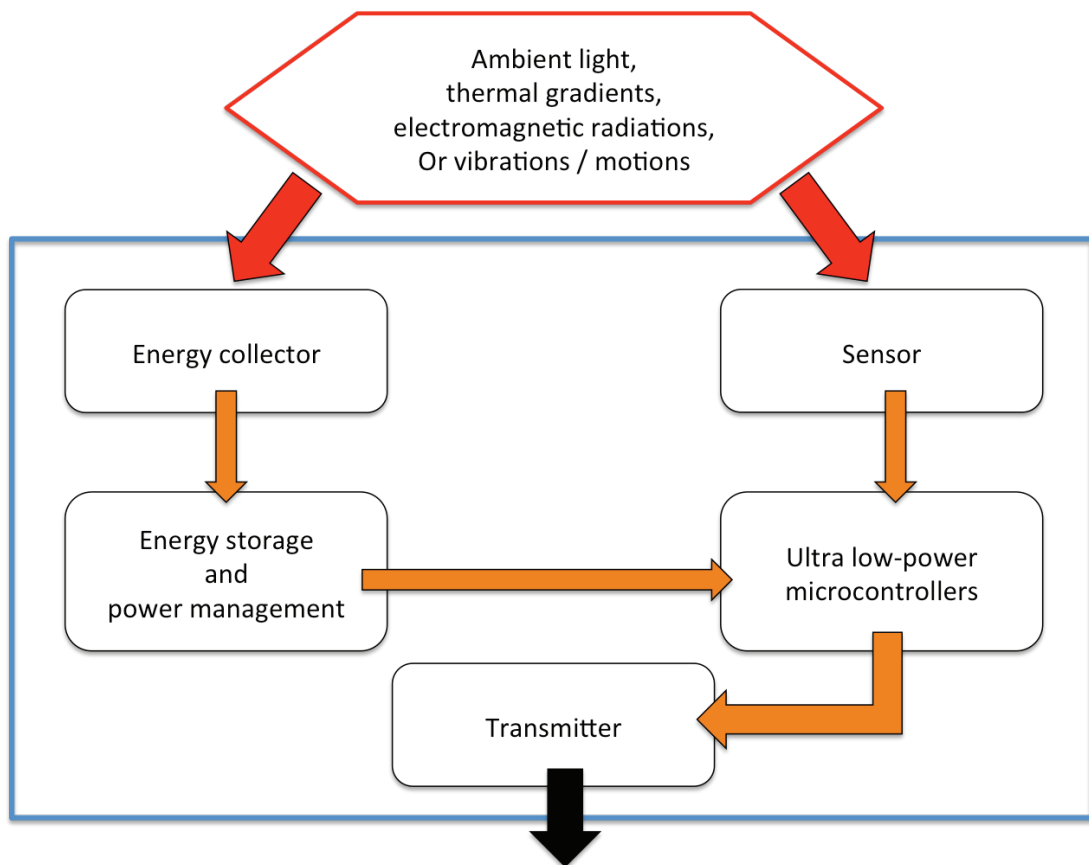
As we are watching that the world run out of oil, we also are watching the environment run out of time in terms of *energy consumption*. The competitiveness of our society makes the demand for energy grow at an exponential rate. This is the reason why the world always needs to produce more energy. But what if this increasing energy demand could be tackled not only by producing more energy, but also by efficiently using every tiny watt available?

Energy waste is an epidemic :

The most striking example being the buildings we use in our daily lives. During the summer, most of the thermal transfer received by a building is lost, whereas during the winter we could use that energy to heat the building instead of wasting money and resources.



At the very least, one should try to save as much energy as possible by applying proper insulation and consuming efficiently. Motorized vehicles present another example of waste; uphill they consume a lot of energy and, downhill, an equivalent mechanical energy is dissipated in the form of heat, created by the friction caused by braking.



Broad outline of an energy recovery system

The chart below shows *the principles of harvesting, recycling and storing*. They consist in gathering the energy naturally occurring in the environment and then converting it into usable forms of energy (thermal, mechanical, electric, etc.) which will be stored under their most efficient form for later use. The whole process is running while trying to avoid waste.

This principle may have many applications. Currently some examples, including the *KERS* (kinetic energy recovery system), are available for hybrid vehicles. The KERS recovers the heat released during the braking phase of the vehicle; this converts ther-

mal energy into another form and then stores it. It can be stored in a battery (electrical energy), a flywheel (mechanical energy) or even in a hydraulic pressure accumulator. Once transformed into power, it can be use to boost acceleration. So the KERS is also used in Formula 1 for this purpose.

Another example of an energy recovery system is the «*OCR waste heat generation system*» produced by Energy Recovery Systems, LLC, which uses heat that would otherwise have been wasted. These systems require no additional fuel input, making them cheap to run and environmentally friendly.



KERS system



Energy-conserving lamp



Energy-efficient Home

Many examples such as these can be found nowadays, because high technology firms are investing a lot of money in research for these systems. But even with this recent wave of research, there is still a lot to improve in harvesting and recycling energy. The goal for the future is to recover and transform every little Joule of energy currently wasted. As engineering students at ENSE3, we could consider research on how to improve energy usage.

There Will Be Blood



Country	United States
Genres	Drama
Release date	February 2008
Directed by	Paul Thomas Anderson
Starring	Daniel Day-Lewis Paul Dano Dillon Freasier Ciarán Hinds

« Ladies and Gentlemen, take it from me as an **oil man** – humbly – there aren't going to be many gushers here at Signal Hill. A field plays out very quick. In two or three years, these wells will be dry – even this discovery well that's gushing down the road and **has everyone so crazy** »

This film is about oil, about a man whose passion for oil will go over the limits and who will bury all his humanity to get the «black gold». Violence, blood, ambition and courage will be the only ways to fulfill his precious dream. No more God, only power, individualism and money. In 1902, Daniel Plainview finds oil even though he was just looking for minerals. This oil changes his and his son's lives forever. He establishes a small company which soon expands. In the meantime, he meets a family that does not want to sell its land. Big Oil companies such as Standard Oil and Union Oil will not let him conquer the market so easily. The competition is intense. Oil and blood soon cover the land. The film is listed on the

American Film Institute's "10 Movies of the Year" list. It was internationally acclaimed: "There Will Be Blood is bravura film-making by one of American film's modern masters. Paul Thomas Anderson's epic poem of savagery, optimism and obsession is a true meditation on America. The film drills down into the dark heart of capitalism, where domination, not gain, is the ultimate goal. In a career defined by transcendent performances, Daniel Day-Lewis creates a character so rich

and so towering, that «Daniel Plainview» will haunt the history of film for generations to come." Daniel Day Lewis performs brilliantly as Daniel Plainview. The character becomes more and more eager to succeed and to "drink the milkshake" of others to expand his empire. Lewis won the Academy Awards as Best Actor as well as other awards. This is a great masterpiece about men, power and energy!



L'Avenir de l'Eau, Petit Précis de Mondialisation, Tome 2

Erik Orsenna

Le volume de ce livre ne doit pas vous faire peur. L'avenir de l'eau se lit d'une traite, à la façon d'un roman. Et pourtant, ce livre est bien loin d'être une fiction. Erik Orsenna décrit l'état actuel de notre monde vis-à-vis de la gestion des ressources en eau. L'eau devient ce que beaucoup appellent l'or bleu, une ressource convoitée par tous et à toutes les échelles. Erik Orsenna nous emmène autour du monde pour découvrir les différentes problématiques et les risques liés à cette ressource vitale. Ce livre vous propulsera dans un voyage au cœur de l'humanité et même à travers un monde nouveau. L'eau qui s'écoule de nos robinets si facilement ne sera sans doute plus aussi banale qu'elle en a l'air.



Ce livre s'adresse à toute personne qui s'intéresse à l'histoire du monde, de l'eau et de leurs impacts sur l'avenir de l'humanité.

Un incontournable



Le Courrier Etudiant de l'Energie et de l'Eau

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