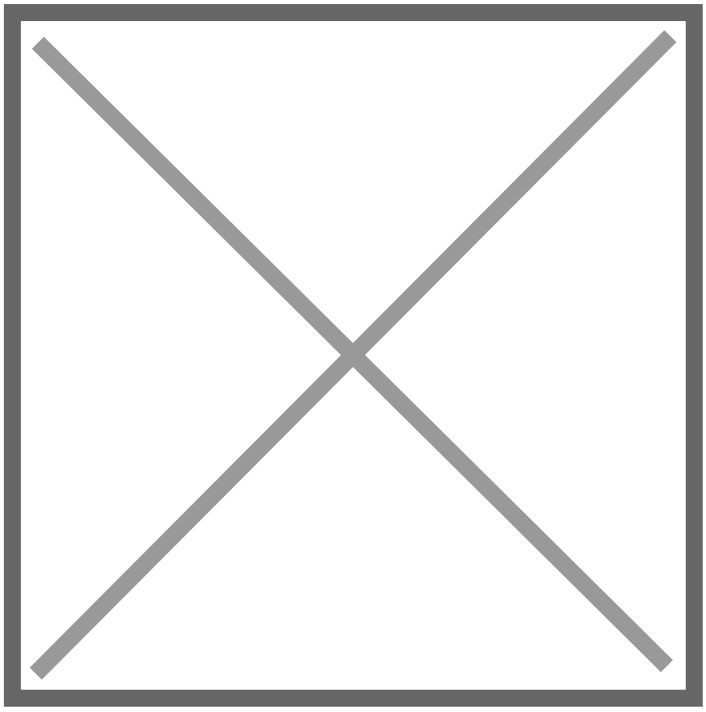
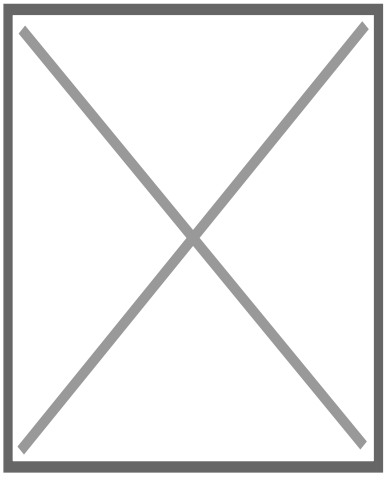
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Australian cows, seas to solve global energy problem

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The Australian state of Victoria and a leading geneticist, Dr Craig Venter have come together to solve the global energy problems by using microorganisms found in the Victorian soil and seas and in the digestive tracts of methane-producing cows.

The world's energy crisis may find solution from the cows in Australia and the seas around the world's smallest continent Down Under.

Dr Craig Venter, the father of the Human Genome Project has signed with the State of Victoria to intensively study microorganisms found in two agriculturally significant soil types in Victoria and also the microbes found in bovine digestive systems.

The agreement between the J Craig Venter Institute and the State of Victoria was announced by Victoria's Prime Minister, Steve Bracks and Dr Venter during the BIO meeting in Chicago recently.

The Venter Institute will use whole genome shotgun sequencing to characterize micro-organisms and describe environmental diversity. Venter's team had been scouring the Sargossa Sea in Australia in the last few years and has used this method to characterize 1,800 previously unknown microbial species and 1.2 million novel genes in water samples. " The findings will be

made public soon," announced Dr Venter.

The project will help researchers better understand overall species diversity and build the foundations of for a longer term goal of generating new technologies for livestock and plant-based industries.

Ruminating cattle produce nearly 20 percent of the methane gas emitted globally and is a major contributor to the accumulation of greenhouse gases leading to global warming. Researchers will study the microbes producing the methane and learn from them to adapt to them to produce hydrogen gas to solve global energy crisis.

Victoria's Minister for Innovation, John Brumby, said "Decoding this DNA will enable researchers to identify new microbes and genes and to understand their potential role in many environmentally significant processes, and in turn facilitate the development of new technologies."

Brumby said the partnership was designed to fast-track the development of Victoria's already outstanding capabilities in the rapidly evolving science of environmental genomics. The state's investment would contribute to the development of thriving innovative industries and to a healthier environment.

Microorganisms are of scientific and commercial interest because, while they are responsible for most of the chemical transformation within the earth's major biogeochemical cycles, they are not well understood. Soil harbors most diverse microbial communities on earth. Further, both soil and ruminant digestive microbes have the ability to degrade waste products, imbuing them with a vast number of potential applications in medicine, agriculture, manufacturing and mining.

"The power of whole genome shotgun sequencing is that it can unlock biological information both at the individual species level and at the whole ecosystem level, opening up a vast new world of discovery for researchers," added Dr Venter.

Australian scientist Dr Paulin Mele, who will lead the project in Victoria noted that as much as 90 percent of microorganisms present in the soils were yet to be identified and represented the world's largest "gene reservoir." She added that "the profiling of DNA from soil micro-organisms will allow us to identify how soils differ in fertility and to quantify the impact of management of fertility."

The collaborative project will create an inventory of the microorganisms and their gene complements. The researchers hope to discover and characterize at the genomic level new species of bacteria and viruses.

Narayanan Suresh