

## عنوان مقاله:

Use of geothermal energy as an emerging renewable energy efficient technology in dairy processing

## محل انتشار:

سومین کنفرانس بین المللی رویکردهای نوین در نگهداشت انرژی (سال: 1392)

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## خلاصه مقاله:

The growth of dairy industries is dependent on the availability and affordability of energy. Conventional energy sources such as fossil fuels include 80% of the total energy consumption. But they are getting depleted and their price is increasing rapidly due to market forces and world politics. It is therefore necessary to consider alternative energy sources and geothermal energy is a potential option. Geothermal energy is thermal energy generated and stored in the Earth and can be utilized for both electricity generation and direct uses such as heating and cooling. In modern direct-use systems, a well is drilled into a geothermal reservoir with low to moderate temperatures (50-150°C) to provide a steady stream of hot water. The water is brought up through the well, and a mechanical system such as heat exchanger delivers the heat directly for its intended use. A disposal system then either injects the cooled water underground or disposes of it on the surface. The dairy industry in Iran can benefit from the geothermal energy in the country since both dairy farming and the geothermal resources are located in the same region i.e. the North-western region. Development of this renewable energy applications, improves energy security, reduces environmental pollution, greenhouse gas emissions and their impact on global warming and dependence on fossil fuels sources. There are no reports on geothermal energy in dairy processing in the general literature. This paper represents a pioneering effort to discuss some of the dairy processing operations which can utilize geothermal energy and the appropriate technology which can be applied for each operation.

## کلمات کلیدی:

dairy industries, fossil fuels, geothermal energy, renewable energy

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