

عنوان مقاله:

Clean Electric power generation from the high pressure fluids

محل انتشار:

دومین کنفرانس بین المللی رویکردهای نوین در نگهداشت انرژی (سال: 1391)

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خلاصه مقاله:

Worldwide energy crisis, increasing the demand of energy and the large amount of greenhouse gas emission that raises environmental concerns necessitate the clean sources of energy. The internal energy of high pressure fluids is such clean source of energy. Therefore, recapturing of wasting energy in the pressure reduction stations along gas, national crude oil and water pipelines is investigated in this paper. The extractable energy calculation and the economic assessment of some real cases are presented in this paper. The importance of high pressured fluids specially the pressured gas is appropriately highlighted considering the extended national gas pipeline all over the country. The results show that the application of pressured fluid energy extraction systems for electric power generation not only is profitable from economical point of view, but also make considerable reduction in the greenhouse gas emission. In addition, it is founded that the conventional P.R.V.s substitution by turboexpanders in the gas pressure reduction station likes CGS, TBS and ones feed power plants and the industrial complexes, is more profitable and also more complicated in compare with other pressured fluids. The results also reveal that the necessity of domestic design and manufacture of turboexpanders in order to reduce the investment cost of energy extracting system and also to reduce the industrial dependence on foreign countries, considering the recent imposed sanctions

کلمات کلیدی:

clean electric power, high pressure fluid energy, energy extraction system, turbo expander

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