

Re: Nuclear PBMR district heating

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- *From:* "Alex Terrell" <alexterrell@xxxxxxxxx>
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Giuseppe wrote:

> I read something about these small "pebble bed" modular reactors to be built
> in South Africa. They are high temperature nuclear reactors, graphite
> moderated and helium cooled. The core heats up helium from 500 to 900
> °C, after that is discharged at 140 °C. Could it be possible to heat up water
> at temperatures high enough for district heating or district cooling in the
> hot months?

Probably, but at 140 degrees you'd want to drive a steam turbine and generate more electricity. Unless of course you have lots of reactors and need to do something with surplus night time thermal energy.

> Have you got any estimate about max water temperature achievable
> with helium at 140 °C?

>

Close to 140 C, but that would be inefficient. You'd probably want to heat the water to 80-90 degrees or so.

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