

European-African solar energy project for Global climate stabilisation, African development and good neighbourhood

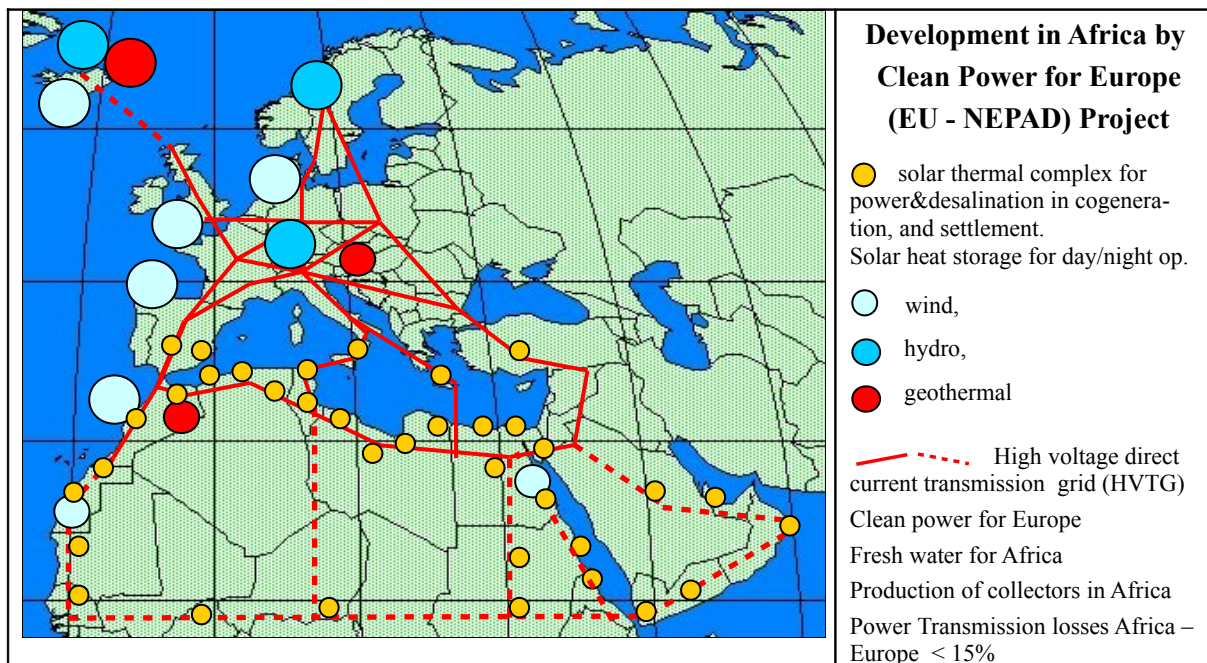
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Summary

If the highly developed countries in Europe would buy solar and wind electricity at climate scale, i.e. 10% or more of their consumption, from less developed countries in North Africa, then Europe and Africa could jointly

1. reduce the excessive, dangerous CO₂ emissions of Europe much faster and at lower cost
2. curb climate change hazards like desertification in North-Africa
3. boost development in Africa, if a large fraction of solar and wind technology is produced there
4. convert the Mediterranean from a divide between 2 incompatible worlds into a link between two communicating and trading neighbours.

The salient features of the proposed “Euro-Afro project for sustainability and good neighbourhood” are illustrated in the following 2 figures.

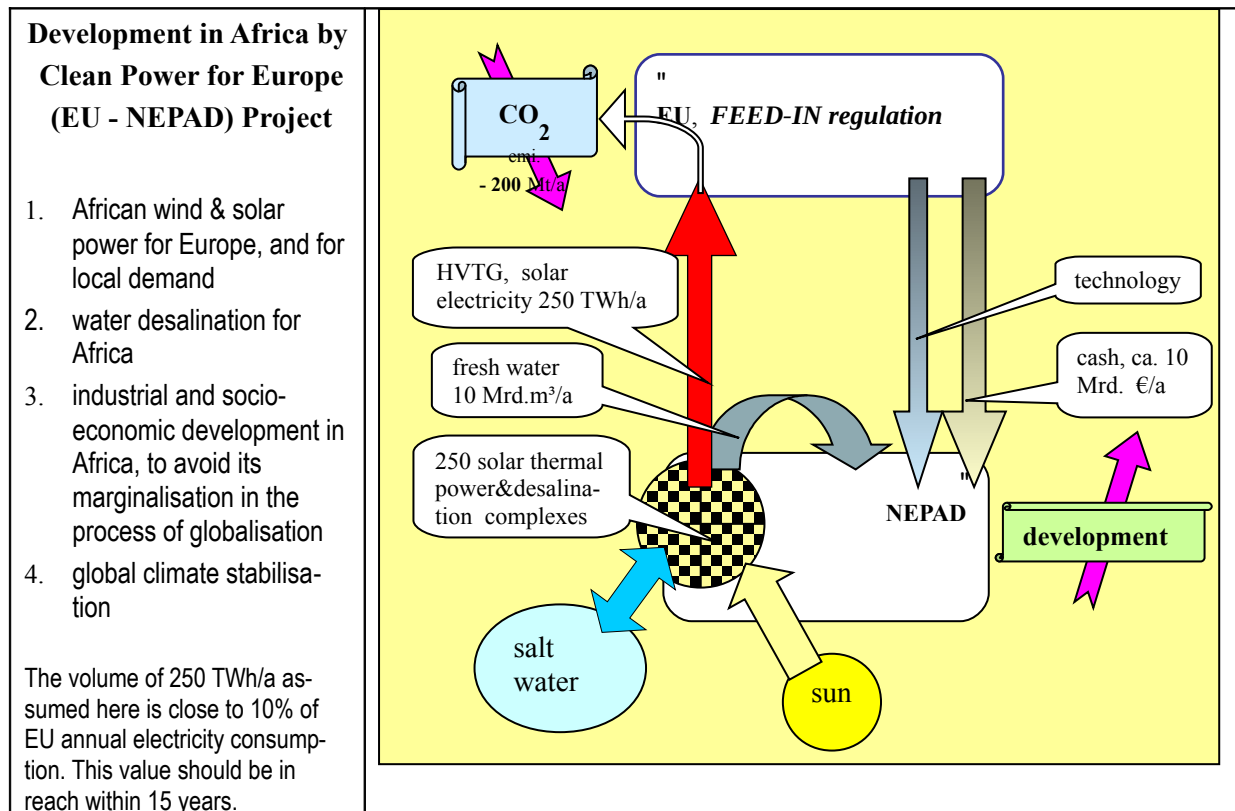


An Euro-Afro solar power co-operation can turn the presently conflicting goals of *climate stability* and *economic development* into mutual supporters, by making clean energy production in Africa for local and for European demand to a motor for industrial and socio-economic development in Africa. Africa could take advantage of its superior solar radiation and wind resources to generate clean electricity as a competitive industrial product for export to the world market. The developmental gap between Europe and Africa could be reduced.

The key elements of this project are:

1. **Clean electricity for Europe and desalinated water for Africa in co-generation.** With the already established technologies for wind turbines and for solar thermal power plants, in North Africa power could be generated from wind and sun at significantly lower costs than in Europe. Together with 10% of EU electricity 10 billion m³ water can be desalinated per year.
2. **A modern, low loss and low cost transmission system for electricity across the Mediterranean.** It would connect the best solar and wind regions of the world to the European power grid. The first HVTG sea-cables connecting Spain and Morocco across the Street of Gibraltar are already in operation.

3. **Cost reduction:** Installation of capacities for the local and for 10% of European demand could be achieved in about 15 years. Within 10 years build-up solar power could become cost competitive with electricity produced from oil at prices from 20 to 25\$ per barrel.
4. An **EU feed-in act for clean power from Africa** would ensure private investment into the project during the initial cost reduction phase until competitive with fossil fuels has been reached.
5. African-European co-operation to develop **African engineering and production capacities**.
6. Synergies from **good neighbourhood between Africa and Europe**.



The technology of concentrating solar collectors, as parabolic trough or as linear Fresnel collector, to be employed here for generating steam for power plants, can be applied in all arid or desert regions of the world. After the cost reduction to be achieved in the Euro-Afro project, concentrating solar collectors could be used to produce clean power also for North and South America, North and South Africa, India, China and Australia, i.e. for more than 90% of world population. Thus this technology could make a significant contribution to a fast global climate stabilisation together with economical development. These goals could be achieved within a few decades, if pursued with determination by the global community.

The required financial support is estimated to be in the order of 2 – 4 billion (10⁹) Euro, spread over a period of 10 years.

With the support of UNEP, the proposed European-African co-operation should be established at the level of EU and NEPAD, the New Partnership for African Development, as additional handle for the international climate protection efforts, to achieve real climate stabilisation within this century.