Thermal desalination market perspective, the water-energy nexus, and the particularities of the IWPP model

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Fisia has experience in GCC Countries acting as EPC contractor in IWPP projects since year 2000, when we secured our first contract of this type for the design and construction of the water section of Ras Laffan Power and Water Facility in Qatar. At that time, we were working together with Enel Power as power plant supplier, and the developer was AES.

One year later, Fisia was awarded of Shuweihat Power and Water plant (UAE), where Siemens was the power partner, and CMS / International Power the developer.

In 2005, again with Siemens, Fisia got the project for New Tawelelah B Extension (UAE), having Marubeni Corp. as developer.

Later, we participated to a number of bids for IWPP projects, as Ras Az Zour (2011, KSA, Sumitomo Corp.) and Az Zour North (2013, Kuwait, Malakoff Corp.)
We have therefore gone through an initial phase, at the beginning of last decade, when IWPP projects seemed to be on the way to gradually and partially replace the contracts on EPC basis, followed by another one, in the last years of the same decade, when the market came back again to EPC based contracts. Nowadays, it seems that IWPPs are raising head again, also in Countries historically not used to project financing, like KSA. The drop in the oil price, the reference currencies fluctuations and the global economic situation have surely played a role in this drive.
Presently, the developers active on the IWPP scene are mainly different from the ones we have worked with, with most of them now coming from Far East, and few from other areas. Only in some cases of RO desalination European manufacturers act also as developers. Dealing with this issue, we must also take into account a substantial difference which appeared recently between IWPPs where the water part is based on thermal technologies or RO: while the first ones are usually managed as a single contract where power and water are strongly linked to each other, in the second ones the tendency is towards separate contracts for power and water. Anyhow, even though potentially larger, the pool of developers actually fighting for the award of an IWPP project is in the end restricted to three or four names.
Probably due to the strong competitiveness which is characterizing the market today, the developers show scarce flexibility in the dialogue with EPC contractors, and, maybe for the same reasons, the rules and clauses of IWPP tenders are somewhat excessively severe and stringent. This approach, in some cases, can lead to frustrate the very inner nature of this type of projects and to abate their basic differences with EPC based contracts.

We have to keep in mind that, among the basis of IWPP philosophy, there is a wider freedom for the EPC contractor in its technical solutions, and the targeting for the lowest possible cost of power and water rather than for the lowest possible investment price.
One last issue is relevant to risk management. In the chain Off taker → Lender → Developer → EPC contractor, each part tries to transfer the most of the risks to the next ring of the chain. As a result, the EPC contractor is often loaded with a financial burden difficult to manage. The above has to be taken also considering the basic fact that risks are mainly connected to liquidated damages, which in turn come down from time and performance guarantees. And time and performances are in the end sole responsibility of the EPC contractor itself.