

## Salt Partners ask Straits about Yannarie Solar

**To respond to the worldwide shortage of solar salt, Straits Resources have been promoting a project to establish a new solar saltfield in Western Australia. Until now, the environmental approval has been denied. Salt Partners wanted to know why. They visited James Barrie, Straits Project Manager, and asked about Yannarie Solar.**



James Barrie, Straits Project Manager and Vladimir M. Sedivy, President, Salt Partners

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### Vladimir M. Sedivy:

*Mr. Barrie, can you tell us something about the history of the project?*

**James Barrie:** Well, this project started in 2003 when the Company looked at a number of locations up and down the coast. This is one of the last remaining areas on the coast where it's possible to put a salt field. The area was set aside (by WA Government\*) back in 1970 for the production of solar salt. So, it seemed like a good location. One of the problems with it's that there is very shallow water in the Gulf, which means that we have to use barging to get the salt out, whereas all the other saltfields have access to deep water. So, this is one of the more difficult locations on the coast but work started in 2003 to come up with a design that would satisfy the environmental and the

engineering difficulties for this location.

*What is the ground of the whole area made of?*

The strip down here along the coast is mangroves and algal mat. The algal mat is a blue green algae, which grows in a narrow band between the mangroves and the salt flats. Then, we have this area here down the middle, which is very, very flat, which is the salt flats and the tide doesn't get up that far. The tide only comes up to the limit of the algal mat. The only time the water comes on what we call the super tidal flats is under cyclone circumstances when we have a storm surge that washes up as far as this hinterland area. This hinterland area is made of dunes and high land. It's about fifteen meters above the super tidal flat



Yannarie salt flats with Exmouth Gulf in the background

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area. So, the location of the salt fields is essentially between the upper limit of the tide, the algal mat, and the hinterland and it uses the strip down through the middle. The salt field is represented by the light yellow lines. The lower limit of the salt field is here, the upper limit is here and this distance is about thirty-five kilometres. The seawater intake is down here. This is an existing creek. Water is pumped through a pipe into these concentration ponds here. This is the first pond. Then it decants from one pond to another, increasing in density,

until it reaches this point here. Then it is pumped into this area here, which is the crystallisers, where the majority of salt is made. The further refined bitterns is then discharged into this area here, which we call the bitterns management area. That area is intended to be used for the production of potassium sulphate. And then the final end product, which is not used, is the magnesium chloride.

*What will happen when you flood the area with seawater and when this seawater will evaporate?*

The ponds initially are filled from a pump station and, as I mentioned earlier, they decant progressively into each pond. So, as they fill, they reach a certain level, which is suitable for best evaporation rate. During the early months, there will be some seepage of the seawater down into the silt as it fills the pores. Eventually it settles down. We have a large numbers of biota drawn into these ponds here and over time, fish in here, because they have no natural predators, will grow. With increasing salinity, different types of fish occupy different ponds so we'll have brine shrimp will occupy the ponds down this end whereas larger fish at this end. Of course, this attracts great number of birds, particularly migratory birds, and provides a wet land whereas before it was just a barren salt field.

*Well, it appears to be a very interesting and attractive project. Now, we hear that you have experienced some difficulties in obtaining environmental approval for the project. Can you tell us something about that?*

This is a very large area, with, obviously, a very substantial environmental assessment. But it is made difficult because we don't know what standard we are trying to achieve. It is a bit like the Olympic high jump where we train hard and we aim to jump and clear the bar. So, we run up and jump, we clear the bar, or what we think we have cleared, and EPA (Environmental Protection Authority\*) say: No, you haven't cleared the bar! So, we say, well, ok, we try again, we work harder, we spend more money, we investigate more and we try again. We try and jump much higher than last time and EPA say: But you haven't cleared the bar! We say: But we don't know where the bar is! And they say: You just keep trying and we'll tell you if you cleared the bar. That is where it is left. We keep trying and they keep raising the bar up to a point that we don't know where it is.

*Now everyone speaks about the use of solar energy. Solar salt is one of the most efficient uses of solar energy. Isn't there a conflict between what all over the world people are trying to do, to use solar energy for production of something useful, and here actually*



Location of Yannarie Solar in Western Australia GOOGLE EARTH

*avoiding the use of solar energy for production of very important industrial commodity?*

The terms of reference of the Environmental Protection Authority are to prevent the environmental impacts, which are deemed unacceptable. They are required to consider it in the context of Western Australia only. So, if you take a solar saltfield, which produces salt with very low energy input, than one of the major advantages, which is to displace high energy intensive vacuum salt (by solar salt\*) from another country - that won't be considered by the Environmental Protection Authority. The offsetting effect of saving energy, or its carbon footprint, is not considered in the context of Western Australian environment. Not only must we design the field around the environment but we must also demonstrate that it has no, or only minimal, impact on the environment, to the Environmental Protection Authority. We have been doing that for the past six years. It has been a long, long road. But we are reaching the point of a decision now and in the next four weeks or so, we expect to get a decision.

***This interview was recorded in Perth on 30.1.2009.  
Verbatim transcription and editing (\*) by Salt Partners.  
YouTube link: [www.youtube.com/watch?v=CB8BpB2ancw](http://www.youtube.com/watch?v=CB8BpB2ancw).***

## **Yannarie Solar**

[www.yannariesolar.com.au](http://www.yannariesolar.com.au)

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### **Production**

## **Salt Partners**

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