

# 1- Abstract

## **PROJECT PROFILE – SUMMARY SHEET**

<b><i>Project Introduction</i></b>	
<b>1. Project title:</b> Production of sodium carbonate	
<b>2. Sector :</b> Industry	<b>Sub sector:</b> Chemicals, oil derivatives, rubber and plastic
<b>3. Products/Services:</b> Sodium carbonate and ammonium chloride	
<b>4. Location:</b> Garmsar Industrial Estate, Garmsar County, Semnan Province	
Free zone <input type="checkbox"/> Economic special zone <input type="checkbox"/> <b>Industrial Estate <input checked="" type="checkbox"/></b> Main Land <input type="checkbox"/>	
<b>5. Project Detail:</b> The most up-to-date method for the production of sodium carbonate (soda ash, Na <sub>2</sub> CO <sub>3</sub> ) is Hou's process. This procedure is developed by Chinese chemist Debang Hou in 1930s which includes two steps. In the first step, steam (H <sub>2</sub> O), carbon dioxide (CO <sub>2</sub> ), sodium chloride (NaCl) and ammonia (NH <sub>3</sub> ) react to produce sodium bicarbonate (NaHCO <sub>3</sub> ) and ammonium chloride (NH <sub>4</sub> Cl). Ammonium chloride (NH <sub>4</sub> Cl) precipitates and is removed by filtration, and the solution is recycled to produce more sodium carbonate (Na <sub>2</sub> CO <sub>3</sub> ). In the next step, the sodium bicarbonate (NaHCO <sub>3</sub> ) is converted to sodium carbonate (Na <sub>2</sub> CO <sub>3</sub> ), carbon dioxide (CO <sub>2</sub> ) and H <sub>2</sub> O.	
<b>6.</b> a) <b>Capacity:</b> Nominal capacity: 200,000 ton of sodium carbonate and 200,000 ton of ammonium chloride in year b) <b>Annual production:</b> Actual capacity: 160,000 ton of sodium carbonate and 160,000 ton of ammonium chloride in year	

<b><i>Project Status</i></b>	
<b>7. Local / internal raw material access</b> 100%	
<b>8. Sale:</b> - Anticipated export market 0%	
<b>9. Construction Period</b> 3years	
<b>10. Project Status :</b>	
- Feasibility study available?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
- Required land provided?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
- Legal permissions (establishment license, foreign currency quota, environment, etc.) taken?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
- Partnership agreement concluded with local/foreign investor?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
- Financing agreement concluded?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>



- Agreement with local / foreign contractor(s) concluded? Yes  No
- Infrastructural utilities (electricity, water supply, telecommunication, fuel, road, etc.) procured? Yes  No
- List of know-how, machinery, equipment, as well as seller / builder companies defined? Yes  No
- Purchase agreement for machinery, equipment and know-how concluded? Yes  No

## Financial Structure

### 11. Financial Table:

Descriptions	Local Currency Required			Foreign Currency Required Million Euro	Total Million Euro
	Million Rial	Rate	Equivalent in Million Euro		
Fix Capital	3,497,892	105,743	33,08	133	166,08
Current Capital	247,808	105,743	2,34	0	2,34
Total Investment	3,745,700	-	35,42	133	168,42

- Value of foreign equipment/machinery **133 million euro**
- Value of local equipment/machinery **0 million euro**
- Value of foreign technical know-how **0 million euro**
- Value of local technical knows-how **0 million euro**
- Net Present Value (NPV): **68,41 million euro for 10years.**
- Internal Rate of Return (IRR) **35.31%**
- Payback Period (PP) **5.31 Year**
- Number of people who (will) work in the project: **104**

## General Information

12. Project Type : Establishment  Expansion and completion

### 13- Company Profile Semnan Province Industry, Mine and Trade Organization

- Name (Legal/Natural persons): Mr. Reza Ashraf
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