

Calculation details

Notes

- Gas parameters are given at normal conditions, temperature 0 °C and pressure 101.325 kPa;
- C1/C2+ gas ratio is the volumetric content of methane C1 in relation to heavier hydrocarbons C2+;
- Annual gross margin corresponds to gross profit, which is equal to revenue minus operating expenses.

Plant configuration

- Natural gas reforming;
- Carbon dioxide extraction unit;
- Hydrogen extraction unit;
- FT synthesis unit.

For plant capacity up to 1000 million m³/year, steam methane reforming is used, for capacity over 1000 million m³/year, autothermal reforming with an additional air separation unit is used.

Included in the assessment

- Main process equipment;
- Materials (steel structures, instrumentation and automation devices, pipelines, shut-off and control valves, electrical equipment, painting, insulation, etc.);
- Auxiliary equipment;
- Construction, site preparation, including overhead costs;
- Commissioning, including testing, labor, start-up environments, operating manuals and personnel training programs;
- Professional services (licenses, basic and detailed engineering, procurement, expediting, project management of main contractors);

Not included in the estimate

- Buildings and off-site facilities and structures, including temporary ones;
- Site access roads;
- Land costs and soil investigations;
- Piles or any unusual foundation requirements;

- Transportation costs, employee housing, barracks, mess halls, rest areas, etc.;
- Special climate design of the plant;
- Operating and capital spares, special tools or equipment for maintenance;
- Catalysts, chemicals and raw materials, including initial raw material inventories for start-up;
- Special pollution or noise controls;
- Special communications or computer systems;
- Laboratory facilities or equipment;
- Local permits, taxes and fees, or the cost of doing business in a given area;
- Investment in working inventory;
- Contingency expenses.