Although the figures range widely depending on the industry, the need to prevent unscheduled downtime is crucial to engineering companies in every case.

### 2009–2012 INCREASE IN REFINERY SHUTDOWNS

The US Department Of Energy’s Energy Assurance Daily report tells us that between 2009 and 2012 there were more than 1,700 refinery shutdowns.

- **Mechanical breakdowns**: 46%
- **Maintenance**: 23%
- **Electrical disruptions/power failures**: 19%
- **Other causes**: 12%

### Downtime Costs of a Lithography System

The downtime costs of a lithography system can run in the hundreds of thousands of dollars per hour...

### POTENTIAL LOSS

1,700 refinery shutdowns with an average profit of $18/bbl:

A potential loss of $2,325,600