

**Norton Engineering Mobile Military Field Combustor Prototype Estimate**

Time Estimates

<b>ENGINEERING/DESIGN:</b>	John	Nick	Other
<b>Startup Costs:</b> <i>"Other" is Suzie, Simon, or others</i>			
Funding Related Work Items	40	20	40
<b>Development, Administration, and Record-keeping</b>			
Fabrication Proposals and Paperwork	68	20	20
Initial Coordination Meeting & Coord Discussions w/ Fabrication Shop	36	36	36
Progress Meetings w Fabr Shop (weekly, 26 weeks)	104	58	28
Progress Meetings or Reports w/ Funding Agency & Armed Forces	84	36	48
<b>Design:</b>			
Reviewing Product Literature, Discussions w/ Sales Reps	28	28	12
Engineering Calculations	10	20	24
Drafting - 2D Shop Drawings	24	200	40
Drafting - 3D presentation Drawings	140	100	60
Printing & Assembling Shop Drawings and Presentation Materials	4	28	48
Writing and Publishing Operations and Maintenance Manual	80	60	30
Total Time (hrs)	578	586	346
Hourly Rate (\$):	\$161	\$79	\$65
Sub-Totals (\$):	\$93,058	\$46,294	\$22,490
<b>Total Design Estimate:</b>	<b>\$161,842</b>		

<b>MATERIAL &amp; COMPONENTS PROCUREMENT:</b>	Cost \$
Flat Bed Truck Trailer	\$65,000
Combustion Chamber	\$85,000
Refractory	\$89,000
Combustion Chamber Door #1 -SW Inlet	\$15,000
Combustion Chamber Door #2 -Residuals Outlet	\$16,000
Smoke Stack	\$45,000
Stack Erector System	\$35,000
Combustion Air Blower(s)	\$26,000
Combustion Air piping and Nozzels	\$21,000
Combustion Management Tools	\$7,800
Ancillary Components Generator for Blowers	\$45,000
Presently Unforseen Components	\$145,000

**Total Parts Estimate: \$594,800**

<b>FIELD COMBUSTOR FABRICATION:</b>	
Trailer and Combustor Assembly	\$9,600
Refractory Installation	\$21,500
Stack & Erector Assembly and Trials	\$28,000
Blower Air Injector Assembly and Trials	\$22,000
Field Tests (out doors, locally) with Revisions & Rehab as Necessary	\$45,000

**Total Fabrication Estimate: \$126,100**

[Does not include Air Pollution, Boiler, or Energy Recovery Components]

**Total Total Project Estimate \$882,742**