



## *CESS Steam Turbine Experience*

Head-quartered in Stromness in the Orkney Islands, CESS Ltd was originally formed in 1990 and has rapidly developed as one of the World's leading sourcing, valuation & marketing agents and suppliers of surplus and "advance-order" power plant and related equipment.

CESS provide a prompt and effective response on inquiries for power plant and prime movers - gas & steam turbines, diesel engines, hydro turbines, etc. - along with ancillaries, such as transformers.

The Company can also provide the manpower required for project development, feasibility studies, asset and surplus equipment valuation, environmental impact assessment (EIA), engineering design, procurement, construction, commissioning and eventual de-commissioning, dismantling and removal/recycling of such facilities usually on a contract basis.

During 1995, CESS was successful in the sale of a **25 MW AEG** steam turbine generator with auxiliaries to **Binani Cement** in **India**.

During 1996, the company completed a major contract for the **South African Pulp & Paper Industries (SAPPI)** cellulose plant at Umkomaas in Natal/Kwa-Zulu.

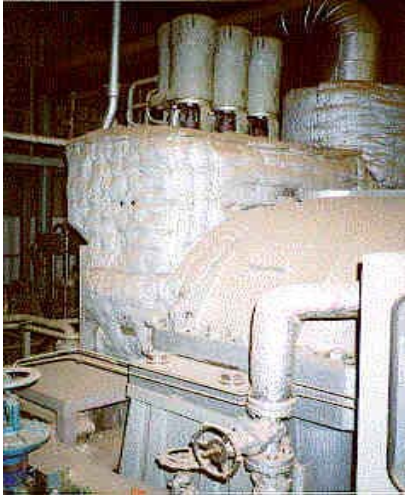
This project (US\$ 1.5 Million) involved the purchase, removal, and shipment of **2 x 6 MW Siemens Gortitz** steam turbine generator sets from Gotha in **Eastern Germany** and their re-installation at the Sappi Saiccor Plant in **South Africa**.

In December 1996, CESS purchased and de-commissioned a 3 MW **Peter Brotherhood** and 6 MW **AEI** steam turbine generator set from **BPB Paperboard's** Davidson Mill in Aberdeen, **Scotland**.

In August 1998 CESS were appointed by the **Tennessee Valley Authority (TVA)** to perform an initial valuation of all TVA's surplus assets and in December 1998 **TVA** awarded a further **3 year Direct Marketing Contract** to CESS for their surplus and unused equipment.

This equipment included some 1200 MW **ABB** steam turbines and 8 x 6 MW unused **GE** steam turbines.





During March 2000, CESS was contracted by **PSEG Global Limited** to perform inspection and market valuation on a 10 MW **Foster Wheeler/Siemens** unused wood waste fired power plant in **Malaysia**:



In January 2001 CESS entered Valuation and 2 year Exclusive Marketing Agreement with **Mighty River Power** for the unused **250 MW Marsden B Power Station** in **New Zealand**.



In May 2001, CESS were contracted to inspect and prepare a preliminary market evaluation report on the **2000 MW Inverkip Power Station** for **Scottish Power**.

CESS was then contracted by **Renova AB** in **Sweden** to perform the inspection, valuation and marketing of their 14 MW **AEG** steam turbine in waste-to-energy plant.



In October 2001, CESS secured a contract with **Reliance Industries** in **India** for the inspection, valuation, and marketing of a 25 MW **Siemens** steam turbine,

In November CESS supported **Sinclair Knight Merz** in **New Zealand** in the valuation of a 17 MW **Alstom** steam turbine generator set.



In Dec 2001, CESS were approached by **Price-Waterhouse-Coopers** in **Malaysia** to prepare estimated resale values for an unused 7MW wood-waste/biomass power station, which one of their clients had decided not to install and planned to offer for ex-stock delivery.

CESS's site activities during 2002 extended in valuation & appraisal work, with detailed technical due diligence being completed on a 300 MW CCGT plant for **Peak Pacific Power** in **China**, which included an **ABB** (70 MW), **Siemens** (17 MW) and a Harbin (15 MW) steam turbine.





During 2002, CESS also completed inspection and technical due diligence on the bottoming cycle equipment for 2 x 70 MW CCGT plants (including 2 x unused **Mitsubishi 70 MW steam turbines**) for projects in **Bangladesh** and **Bali**.

In March 2003, CESS secured the sale of a **1.5 MW Dresser-Rand** condensing steam turbine to Tiso DOO in **Slovenia**:



In September 2003, CESS were successful in the sale of a **15 MW Siemens** steam turbine from **Danisco Sugar** (Sweden) to **RBNS Sugar Mills** in India.



CESS was also successful in the sale of **2 x 1.25 MW Daniel Adamson** condensing steam turbines from Ministry of Defence (UK) to Haycarb in **Sri Lanka**.

The units have now been relocated and are re-commissioned in Sri Lanka:





In July 2003, CESS secured a contract with Fife Power (in Administration) for the valuation and exclusive marketing of a 124 Mw, low hours, GE Frame 6FA CCGT Power Plant with 57 MW Ansaldo steam turbine at Cardenden in UK - This complete plant was sold to Scottish & Southern Energy plc in Feb 2004 for £ 12.3 Million.

In Dec 2004 CESS completed inspection and valuation of 13 steam turbines for CSR Sugar in Australia.



In May 2005, CESS completed valuation and marketing of a zero-houred 10 MW Siemens steam turbine in Poland.



In June 2005, CESS sold another 10 MW AEG steam turbine from British Sugar to RBNS Sugar in India.





In July CESS were successful in sale of **East Lancs Paper Mill plant (2 on 1 CCGT Tornado units)**

CESS also completed inspection and appraisal of a 9 MW **Siemens** steam turbine in **Thailand** in August 2005:



In Nov 2005 CESS was asked by Epcor to carry out inspection and valuation of their 4 x 165 MW power Plant at Clover Bar in Edmonton.

In March 2006, CESS were successful in sourcing of a replacement 24 MW back pressure steam turbine for Hiang Seng Fibres in Thailand.

In June 2006, CESS completed preliminary inspection of a 6 MW Siemens steam turbine in Eire for MAN Sugar and in August CESS arranged for site inspections and dismantling quotations for Tata Chemical of India on a 30 MW Back pressure steam turbine in Poland.





In September 2008 CESS worked on a Desktop Future Appraisal of 150 MW Edenderry peat-fired Power Plant in **Eire**.

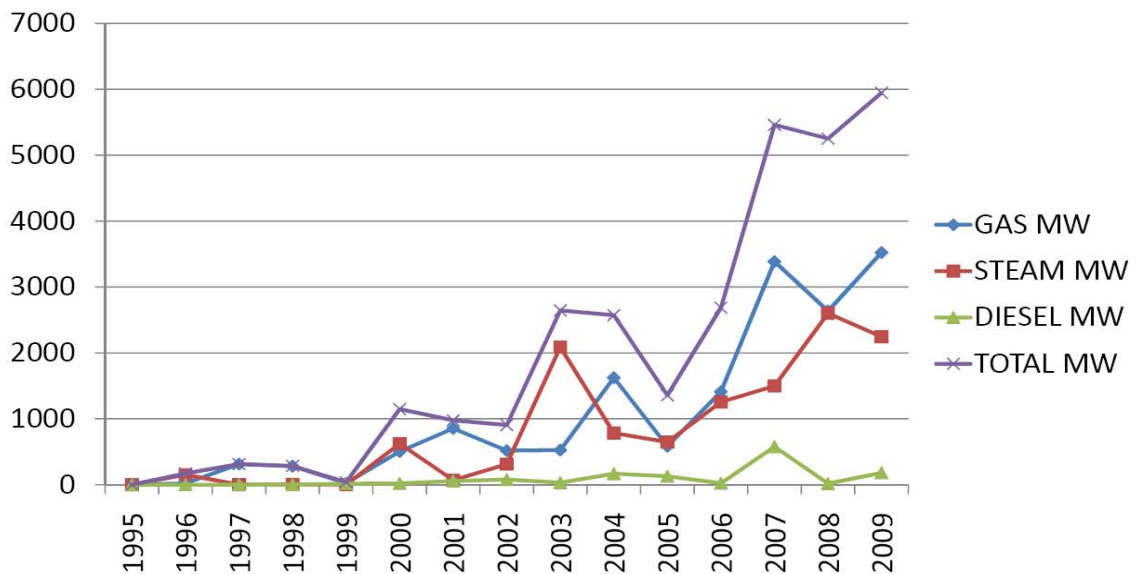


In December 08 CESS was contracted to owners to inspect and appraise the 10.5 MW Arbre Biomass CCGT Power Plant.



In January 2010 we carried out summary appraisal on 13 MW CCGT Plant in UK for PB Power and in April 2010 CESS arranged sale of 8MW Dresser Rand steam turbine to **CENTRAL AZUCARERA TEMPISQUE SA** in **Costa Rica**.

## Valuations to date 2009



**CRAIGIE ENGINEERING SALES & SERVICES Ltd** has to date been instrumental in the sale of 75 gas turbines (total 2,145MW), 37 steam turbines (1,362MW), 96 diesel/gas engines (230 MW), and 45 transformers (total 616 MVA).

CESS has now reached an impressive total of over 50,000MW of valuation experience in the past ten years and these valuations have included:

- 392 gas turbines with total of over 21,093MW (including Allison, Rolls Royce, GE, Solar, Pratt & Whitney, Fiat, Ruston, GEC Alstom, Westinghouse, Mitsubishi, Siemens & ABB/Alstom)
- 180 steam turbines with total of 18,056MW (including AEG, ABB, Ansaldo, Blohm & Voss, Elliott, Fuji, GE, Hitachi, Westinghouse, Siemens, Terry, Mitsubishi, Parsons, Stal, Allen, KKK, Peter Brotherhood, Daniel Adamson, AEI/EE, Worthington, Zamec & Alstom)
- 451 diesels with total of over 1,850MW (Niigata, Pielstick, Crossley, Colt, Polar, MTU, MWM Deutz, Mirrlees, Enterprise-De Laval, Superior, MAN/B&W, Wartsila/NSD, Ruston, Cummins, Caterpillar/MAK, Rolls Royce/Ulstein/Allen)

### **CESS Project Experience**

		Valuation	Marketing	Sourcing	Sale
<b>Gas Turbines</b>	<b>Number</b>	<b>392</b>	<b>173</b>	<b>163</b>	<b>75</b>
	<b>Capacity (Mw)</b>	<b>21093</b>	<b>8680</b>	<b>6310</b>	<b>2145</b>
<b>Steam Turbines</b>	<b>Number</b>	<b>180</b>	<b>119</b>	<b>58</b>	<b>37</b>
	<b>Capacity (Mw)</b>	<b>18056.5</b>	<b>8972.5</b>	<b>8586</b>	<b>1362</b>
<b>Diesel Engines</b>	<b>Number</b>	<b>451</b>	<b>233</b>	<b>151</b>	<b>96</b>
	<b>Capacity (Mw)</b>	<b>1850.5</b>	<b>1082.4</b>	<b>572.4</b>	<b>230.4</b>
<b>Barges</b>	<b>Number</b>	<b>35</b>	<b>19</b>	<b>91</b>	<b>6</b>
	<b>Capacity (Mw)</b>	<b>1867</b>	<b>973</b>	<b>5452</b>	<b>354</b>

**Major Client list:**

- Tennessee Valley Authority
- JP Morgan Securities (Hong Kong)
- BASF Refinery (Belgium)
- PSEG Global Limited (London, UK)
- Scottish Hydro Electric plc (UK)
- Rolls Royce Power Ventures Ltd UK
- BC Hydro (Canada)
- Exxon Corporation (Esso UK)
- Maritrans Tankers (USA)
- Allegheny Energy (USA)
- Contact Energy Ltd (New Zealand)
- PriceWaterhouse Coopers (Malaysia)
- BPB Paperboard (UK)
- AECI Operations Services (RSA)
- Smit International Ltd (Scotland)
- Peak Pacific Investments (China)
- Miller International Loss Adjusters (UK)
- Petroplus (Netherlands/UK)
- JP Morgan Chase (Hong Kong/UK)
- Tri Energy (Thailand)
- Tasiast Mauritanie Ltd (Mauritania)
- China Light & Power Ltd (Hong Kong)
- Carron Engineering & Const'n (UK)
- Sree Rayalaseema Alkalies (India)
- Synergy Capital (Pakistan)
- Morgan Stanley (USA)
- Hermes (Netherlands)
- Bank of America Leasing (USA)
- Nucor Corp (USA)
- Standard Bank (South Africa)
- GDF/Suez (UK)
- GE Finance (Indonesia)
- Nomura Research Institute (Japan)
- SAPPI (South Africa)
- Stewart & Stevenson Int' Inc. (USA)
- International Power (UK)
- Slough Heat & Power (UK)
- Sabah Shipyards (Malaysia)
- Jacobsens-Elektro A/S (Norway)
- Midlands Power International (UK)
- Reliance Industries (India)
- Pentex Oil & Gas (UK)
- ENSCO (Louisiana, USA)
- Trust Power Ltd (New Zealand)
- Renova AB (Sweden)
- Bahrain Electricity ST (Bahrain)
- GATX Capital / AARM (Australia)
- Ernst & Young (Malaysia & UK)
- Negriz Group (Nigeria)
- EPCOR (Canada)
- Jaguar Energy (Belize)
- Genesis Power (Sao Tome)
- Tata Chemicals (India)
- Masood John Brown (India)
- Blue Crest Capital (UK)
- Sita Limited (UK)
- Industry & Energy Assoc' LLC (USA)
- Green Frog Fuel (UK)
- Elyo Facilities (UK)
- Crown Cork (Cambodia)
- Premier Power (UK)
- Parsons Brinkerhoff Power (UK)

Mike Craigie has also written two online articles for Energy Central:

[http://www.energypulse.net/centers/article/article\\_display.cfm?a\\_id=1466](http://www.energypulse.net/centers/article/article_display.cfm?a_id=1466)

Article Viewed 2335 Times

[http://www.energypulse.net/centers/article/article\\_display.cfm?a\\_id=654](http://www.energypulse.net/centers/article/article_display.cfm?a_id=654)

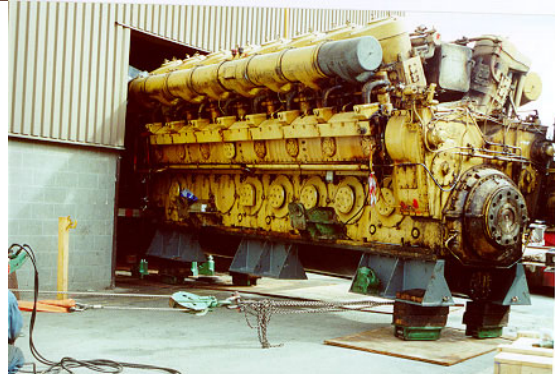
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**Marketing & Exhibitions:**

As part of ongoing marketing efforts on these and other gas/steam turbines and diesel plants, CESS exhibited at Power-Gen in Madrid (June 2007) Power-Gen Asia in Bangkok, Power-Gen New Orleans (Dec 07) and at GT O&M Expo in London in Sept 07.

CESS again exhibited at CEPSI 2008 in Macau and Power-Gen in Cologne 2009.

**CESS is also available to undertake the decommissioning, dismantling and relocation of such plants and have extensive experience in this field:**





Staff at IOD Training Day Jan 2008

## **Craigie Engineering Sales & Services Ltd**

**Energy House, 77 - 79 John Street,  
Stromness, Orkney, KW16 3AD, UK**

**Tel: +44-1856-851177**

**Fax: +44-1856-851199**

**Mobile: +44-7802 916577**

**e-mail: [mike@cess.co.uk](mailto:mike@cess.co.uk)**

**WEB: <http://www.cess.co.uk>**

**Craigie Engineering Sales and Services Ltd.** is based in Stromness in the Orkney Islands, which are 10 miles off the north coast of Scotland. From these headquarters we use latest data transfer systems to handle upwards of 200 enquiries per month for all types of power generation equipment, including gas & steam turbines, diesel engines and related ancillary equipment, right through to complete process and petrochemical plants etc.

The origin or final destination of these projects can be anywhere from Alaska to Zimbabwe and CESS has already processed over 16,500 separate enquiries from over 203 countries. CESS's facilities and equipment include 250 sq meters of office space, the latest e-mail, Internet & file transfer software, colour scanning, design/imaging and printing facilities, all of which guarantee a fast and professional response to enquiries from clients.

**CESS also offer a "turnkey" service on surplus plant which ranges from the preliminary appraisal/valuation and subsequent marketing, through to handling the sale, decommissioning, dismantling, relocation, shipping, re-erection and commissioning.**

