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## Multicell Reforming Heaters Experience by Foster Wheeler

Foster Wheeler has supplied a large number of multi-cell Reforming Heaters on the basis of process design provided by the all range of Process Licensors operating world-wide.

A great importance in undertaking the detailed design and supply of such a critical fired heater has to be given to various engineering and project execution aspects such as:

- Proper understanding of all process parameters;
- Knowledge of proven and well established design;
- Capability to build the largest units in the world;
- Reliability of a reputable and flexible organisation;



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Foster Wheeler has a great number of modern installations the world over serving all reforming processes: platforming, ultraforming, powerforming, rheniforming CCR reforming and others.

Design ranges from vertical-cylindrical to arbor or modified multi-tube arbor types at every capacity level, from the smallest to the largest. Many of these units are designed for minimum pressure drops.

Partial List of Multicell Reforming Heaters Experience by Foster Wheeler



Maximum flexibility and process control are achieved by means of internal separating walls including either gravity type or air-cooled walls of full or partial height. Thermal efficiency is optimised by feed preheating, steam generation, combustion air preheating or a combination of these.

Foster Wheeler has all the in-house technology required for the detailed design, engineering, and construction of a modern large multicell reforming heater.



A partial list of Multicell Reforming Heaters designed and built by Foster Wheeler is given hereto attached.

Partial List of Multicell Reforming Heaters Experience by Foster Wheeler

<b>Date</b>	<b>Company and Location</b>	<b>Duty (MM Kcal/h)</b>	<b>Design Concept / Licensor</b>
2008	Taneco Nishnekamsk (Russia)	58.6	UOP
2007	Chevron Pascagoula/MS (USA)	151.4	FW UOP
2005	Saudi Chevron Phillips Jubail (Saudi Arabia)	22.9	FW CHEVRON
2004	Saudi Aramco Yanbu (Saudi Arabia)	15.0	UOP
2003	Lukoil Neftochim Burgas (Bulgaria)	20.5	UOP
2000	Tupras Izmir (Turkey)	32.7	UOP
1999	NPC Bandar Assaluye (Iran)	55.9	UOP
1999	Phillips Sweeney/TX (USA)	N.A.	UOP
1999	Mapco Memphis/TN (USA)	N.A.	UOP
1999	Parco Mahmood Kot (Pakistan)	26.2	UOP
1998	OMV (Austria)	9.1	UOP
1998	Amoco Geel (Belgium)	13.4	UOP
1998	Saudi Chevron (Saudi Arabia)	N.A.	FW CHEVRON
1997	Saudi Aramco Rabigh (Saudi Arabia)	144	UOP
1996	SAC Pulau Ayer Chawan (Singapore)	44	UOP
1996	RPC Concon (Chile)	36.1	UOP
1996	Saudi Aramco Ras Tanura (Saudi Arabia)	63.8	UOP
1995	Hyundai Oil (Korea)	N.A.	UOP
1995	BP Kwinana (Australia)	35.2	UOP
1994	Dubai Natural Gas Dubai (U.A.E.)	N.A.	LUMMUS
1993	Shell Port Dickson (Malaysia)	8.38	UOP

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1993	Raffineria di Cremona Cremona (Italy)	38.0	IFP
1992	Maraven Cardon (Venezuela)	84.03	UOP
1992	Esso Sriracha (Thailand)	117.09	UOP
1992	Tenneco La Porte/TX (USA)	35.41	UOP
1992	CPC Taoyuan (Taiwan)	46.5	IFP
1991	Chevron Pascagoula /MS (USA)	NA	FW CHEVRON
1991	Ashland Catlettsburg (USA)	26.18	UOP
1991	Valero Refinery Corpus Christi/TX (USA)	28.98	UOP
1990	Mobil Beaumont /TX (USA)	122.6	UOP
1989	Agip Sannazzaro (Italy)	23.5	UOP
1989	Fina Antwerp (Belgium)	84.03	UOP
1988	Koch Refinery Corpus Christi/TX (USA)	58.52	UOP
1987	Esso Augusta (Italy)	30.5	ESSO
1985	American Petrofina Port Arthur/TX (USA)	43.65	UOP
1985	Petromin Yanbu (Saudi Arabia)	50.64	UOP
1984	Shell Port Dickson (Malaysia)	16.46	UOP
1983	OMV Wien (Austria)	25.5	UOP
1983	Naftagas Pancevo (Yugoslavia)	31.92	UOP
1982	Champlin Oil Corpus Christi/TX (USA)	43.65	UOP
1981	Sonara Victoria (Cameroun)	17.14	FW
1981	City Services Lake Charles/TX (USA)	71.7	UOP
1981	BP Kwinana (Australia)	21.5	UOP

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1981	Sasol Sasolburg (South Africa)	15.55	UOP
1980	Esso Castellon (Spain)	10.2	FW
1980	Union Oil Rodeo/CA (USA)	16.8	UOP
1980	Sasol Sasolburg (South Africa)	15.55	UOP
1980	Techmashimport Baku (USSR)	41.25	UOP
1978	Petronor Bilbao (Spain)	21.7	UOP
1978	Enpetrol Cartagena (Spain)	19.5	FW
1977	NIOC Esfahan (Iran)	15.55	FW
1976	Mobil Paulsboro/NJ (USA)	106	FW
1976	Esso Baytown/TX (USA)	112.1	ESSO
1976	Anic Sannazzaro (Italy)	27.7	UOP
1976	Shell Montreal (Canada)	40.4	UOP
1975	Chevron Pascagoula/MS (USA)	34.8	FW
1975	Amerada (Hess) St. Croix (Virgin Islands)	75.9	UOP (2 off)
1975	Cenex Laurel/MN (USA)	20.4	UOP
1975	Petrofina Montreal (Canada)	47.4	ESSO
1975	Chevron Perth Amboj/NJ (USA)	34.8	FW
1975	Irving Oil N. Brunswick (Canada)	37.5	FW
1975	Mobil Wilhelmshafen (Germany)	60	FW
1975	IOEL Dartmout/NS (USA)	N.A.	ESSO
1975	Standard Oil Richmond/CA (USA)	37.5	FW
1974	Rafinor Mongstad (Norway)	33.3	FW

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1974	IHI/Toa Nenryo (Japan)	N.A.	FW
1974	Shell Norco/LA (USA)	79.8	FW
1974	BP Marcus Hook/PA (USA)	35	FW
1973	Chevron Vancouver (Canada)	N.A.	CHEVRON
1973	Shell Anacortes/WA (USA)	48.4	FW
1973	Cosden Big Spring/TX (USA)	28.7	FW
1973	Union Oil Nederlands/TX (USA)	28.7	ESSO
1972	Petronor Bilbao (Spain)	26.4	FW
1972	Mobil Joilet/IL (USA)	57.7	FW
1972	Humble Oil Billings/MT (USA)	N.A.	ESSO
1971	OMV Schwechat (Austria)	31.7	UOP
1971	Esso Shriracha (Thailand)	16.1	ESSO
1970	Mobil Frontignan (France)	23.5	FW
1970	Chevron Pernis (Holland)	78.3	FW
1970	Commonwealth Petrochemical (Puerto Rico)	60	UOP
1970	Sohio Oil Lima/OH (USA)	93	FW
1970	Crown Central Pasadena /TX (USA)	32.5	FW
1970	Shell Deer Park/TX (USA)	73.9	FW
1969	Lindsey Oil Ref. Immingham (UK)	22.7	FW
1969	Mobil Coryton (UK)	29.7	FW
1969	Machino Import (USSR)	44.9	FW
1969	Sacor Porto (Portugal)	30	FW

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1968	Texaco Westville/LA (USA)	37.9	UOP
1968	KNPC (Kuwait)	32.7	FW
1968	Mobil Beaumont/TX (USA)	69.6	FW
1968	Sacor Porto (Portugal)	30	FW
1968	Esso Fawley (UK)	N.A.	ESSO
1966	Texaco Union Station/LA (USA)	46	FW
1966	Sohio Oil Toledo/OH (USA)	24.4	FW
1966	Esso Thessaloniki (Greece)	10.8	ESSO
1966	Mobil N.D. Gravenchon (France)	48.7	FW
1963	Standard Oil Pascagoula / MS (USA)	55.7	FW
1963	Hess Oil St. Lucia (Virgin Islands)	N.A.	FW