

Refining and Marketing

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Refining and Marketing

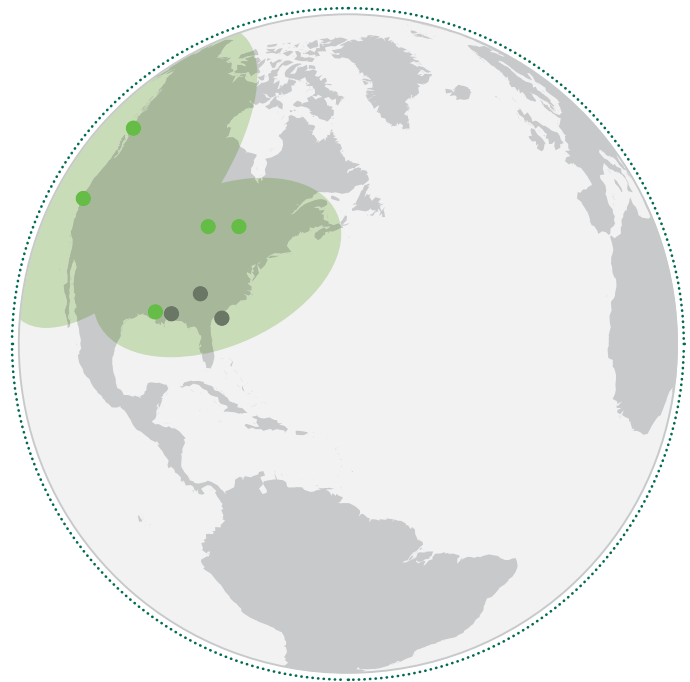
BP's Refining and Marketing business is responsible for the supply and trading, refining, manufacturing, marketing and transportation of crude oil, petroleum and petrochemicals products and related services to wholesale and retail customers.

We have significant operations in Europe and North America and also manufacture and market our products across Australasia, in China and other parts of Asia, Africa and Central and South America.

Our organization is managed through two main business groupings: fuels value chains (FVCs) and international businesses (IBs). The FVCs integrate the activities of refining, logistics, marketing and supply and trading on a regional basis. This provides the opportunity to optimize our activities from crude oil purchases to end-consumer sales through our physical assets (refineries, terminals, pipelines and retail stations). The IBs include the manufacturing, supply and marketing of lubricants, petrochemicals, aviation fuels and liquefied petroleum gas.

Our purpose is to be the product and service-led arm of BP, focused on fuels, lubricants, petrochemicals products and related services. We aim to be excellent in the markets we choose to be in – those that allow BP to serve the major energy markets of the world. We are in pursuit of competitive returns and enduring growth, as we serve customers and promote BP and our brands through quality products.

We believe that key to our continued success in Refining and Marketing is holding a portfolio of quality, integrated, efficient positions and accessing available market growth in emerging markets.

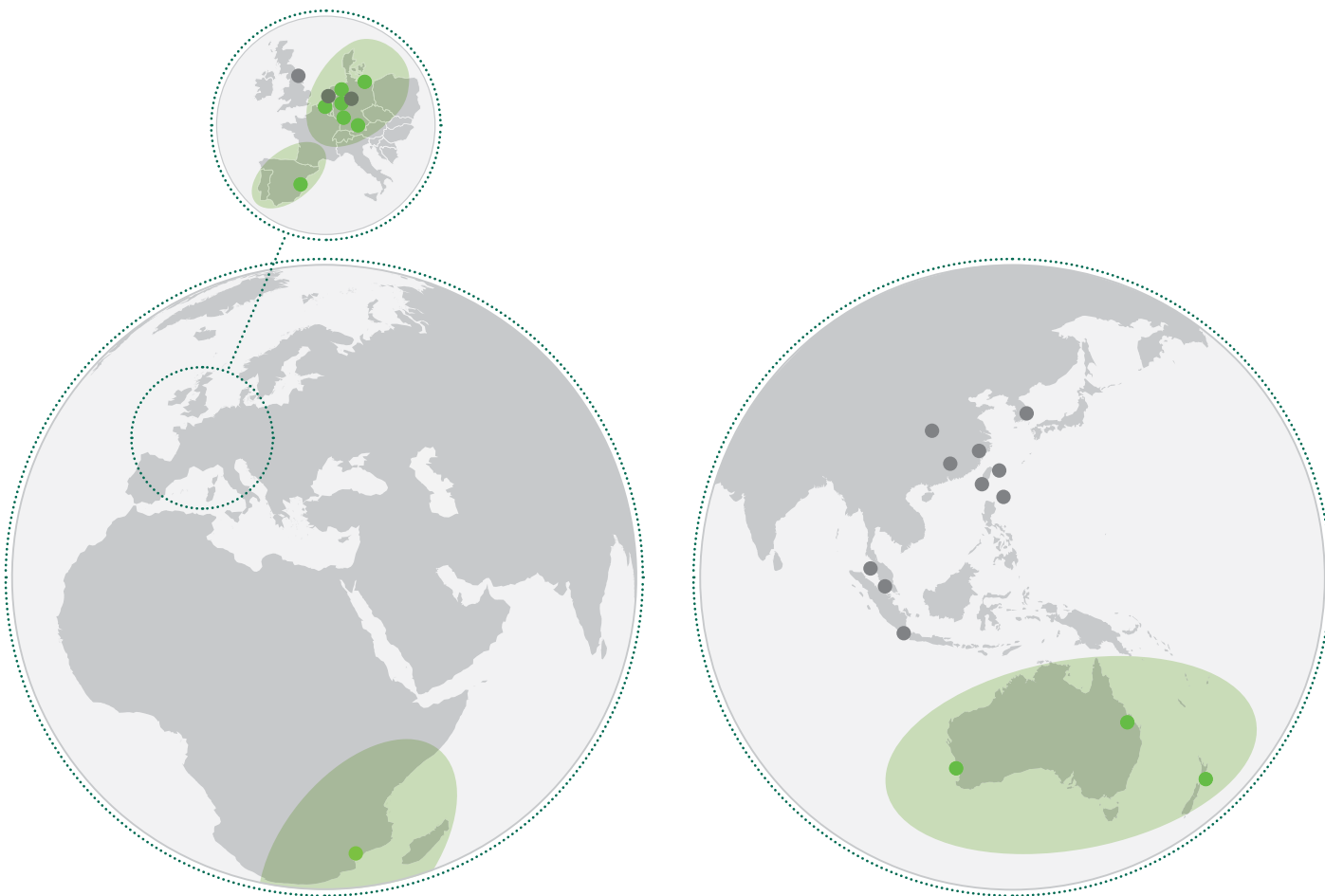


- BP refinery (wholly or partly owned)
- Petrochemicals plant

The green shading indicates the approximate coverage of BP's integrated fuels value chains.



R&M operations in more detail
bp.com/operations



These maps illustrate our Refining and Marketing operations around the world. For more information on our refineries and petrochemicals plants, click on the relevant hyperlink. The links will take you to content on www.bp.com that does not form part of *BP Financial and Operating Information 2005-2009*.

Key indicators

	2005	2006	2007	2008	2009
Result and refining margin					
Replacement cost profit before interest and tax (\$ billion)	4.24	5.16	2.62	4.18	0.74
Global indicator refining margin ^a (\$/bbl)	8.60	8.39	9.94	6.50	4.00
Refining availability ^b (%)	92.9	82.5	82.9	88.8	93.6

Global indicator refining margin by region^a

	2005	2006	2007	2008	2009
NWE	5.47	3.92	4.99	6.72	3.26
Med	5.54	4.87	5.17	6.00	2.11
USGC	11.40	12.00	13.48	6.78	4.63
USMW	8.19	9.14	12.81	5.17	5.43
USWC	13.49	14.84	15.05	7.42	5.88
Singapore	5.56	4.22	5.29	6.30	0.21
BP average	8.60	8.39	9.94	6.50	4.00

^aThe global indicator refining margin is the average of regional industry indicator margins, weighted for BP's crude refining capacity in each region. Each regional indicator margin is based on a single representative crude with product yields characteristic of the typical level of upgrading complexity. The indicator margin may not be representative of the margins achieved by BP in any period because of BP's particular refining configurations and crude and product slate.

^bRefining availability represents Solomon Associates' operational availability, which is defined as the percentage of the year that a unit is available for processing after subtracting the annualized time lost due to turnaround activity and all planned mechanical, process and regulatory maintenance downtime.

Financial statistics

	2005	2006	2007	2008	2009
Replacement cost profit (loss) before interest and tax					
US	2,243	1,358	(1,232)	(644)	(2,578)
Non-US	1,999	3,803	3,853	4,820	3,321
	4,242	5,161	2,621	4,176	743
Operating capital employed					
US	16,968	16,527	17,748	15,904	20,114
Non-US	22,764	24,611	30,163	25,295	26,387
	39,732	41,138	47,911	41,199	46,501
Sales and other operating revenues	212,930	232,386	250,221	320,039	213,050
Property, plant and equipment (net book value)					
US	10,320	10,247	9,440	10,608	12,497
Non-US	12,342	12,901	15,030	14,016	14,616
	22,662	23,148	24,470	24,624	27,113
Capital expenditure and acquisitions					
US	1,226	1,339	1,872	4,297	2,625
Non-US	1,619	1,788	3,623	2,337	1,489
	2,845	3,127	5,495	6,634	4,114
Employee numbers at year end					
Non-retail site staff	42,000	41,900	42,700	40,300	37,700
Retail site staff ^a	27,800	26,100	24,500	21,200	13,900
	69,800	68,000	67,200	61,500	51,600

^aRetail site staff are those employed directly by BP at BP-owned retail sites. It excludes staff at BP-branded sites operated by dealers, jobbers and franchisees.



Petrochemicals production capacities^a

Aromatics and acetyls

Geographical area	Site	Product	Group interest %	BP share of capacity thousand tonnes per year	Joint venture/associate
US					
	Cooper River	Purified terephthalic acid (PTA)	100.0	1,342	
	Decatur	PTA	100.0	1,043	
		Paraxylene (PX)	100.0	1,101	
		Naphthalene dicarboxylate	100.0	29	
	Texas City	Acetic acid	100.0	583 ^b	
		PX	100.0	1,272	
		Metaxylene	100.0	122	
				5,492	
Europe					
UK	Hull	Acetic acid	100.0	532	
		Acetic anhydride	100.0	154	
		Ethylidene diacetate	100.0	4	
Belgium	Geel	PTA	100.0	1,330	
		PX	100.0	624	
				2,644	
Rest of World					
China	Chongqing	Acetic acid	51.0	215	Yangtze River Acetyls Company Ltd
		Esters	51.0	52	Yangtze River Acetyls Company Ltd
	Zhuhai	PTA	85.0	1,524 ^c	
Indonesia	Merak	PTA	50.0	253	PT Amoco Mitsui Indonesia
Korea	Ulsan	Acetic acid	51.0	250	Samsung BP Chemicals Company Ltd
		Vinyl acetate monomer	34.0	56	Asian Acetyls Company Ltd
Malaysia	Kertih	Acetic acid	70.0	391	BP Petronas Acetyls Sdn Bhd
	Kuantan	PTA	100.0	609	
Taiwan	Kaohsiung	PTA	61.4	847	China American Petrochemical Company Ltd
	Taichung	PTA	61.4	471	China American Petrochemical Company Ltd
	Mai Liao	Acetic acid	50.0	179	Formosa BP Chemicals Corporation
				4,847	
				12,983	

Olefins and derivatives (O&D)

Europe					
Germany	Gelsenkirchen	Ethylene	61.0	672	Ruhr Oel GmbH
		Propylene	57.0	347	Ruhr Oel GmbH
		Benzene	50.0	155	Ruhr Oel GmbH
		Cumene	50.0	274	Ruhr Oel GmbH
		Cyclohexane	50.0	73	Ruhr Oel GmbH
	Mülheim	Solvents	50.0	108	Ruhr Oel GmbH
				1,629	
Rest of World					
China	Caojing	Ethylene	50.0	653	Shanghai SECCO Petrochemical Company Ltd
		Propylene	50.0	395	Shanghai SECCO Petrochemical Company Ltd
		Styrene	50.0	356	Shanghai SECCO Petrochemical Company Ltd
		Polyethylene	50.0	385	Shanghai SECCO Petrochemical Company Ltd
		Polypropylene	50.0	143	Shanghai SECCO Petrochemical Company Ltd
		Polystyrene	50.0	164	Shanghai SECCO Petrochemical Company Ltd
		Acrylonitrile	50.0	153	Shanghai SECCO Petrochemical Company Ltd
		Butadiene	50.0	64	Shanghai SECCO Petrochemical Company Ltd
		Other	50.0	647	Shanghai SECCO Petrochemical Company Ltd
Malaysia	Kertih	Polyethylene	60.0	191	Polyethylene Malaysia Sdn Bhd
		Ethylene	15.0	66	Ethylene Malaysia Sdn Bhd
				3,217	
				4,846	

Total BP share of capacity at 31 December 2009

17,829

^aPetrochemicals production capacity is the proven maximum sustainable daily rate (MSDR) multiplied by the number of days in the respective period, where MSDR is the highest average daily rate ever achieved over a sustained period.

^bSterling Chemicals plant, 100% of the output of which is marketed by BP.

^cBP Zhuhai Chemical Company Ltd is a subsidiary of BP, the capacity of which is shown above at 100%.



Petrochemicals production capacities^a continued

Petrochemicals production capacities summary

By geographical area	BP share of capacity thousand tonnes per year					Total
	PTA	PX	Acetic acid	Other	O&D	
US	2,385	2,373	583	151	–	5,492
Europe	1,330	624	532	158	1,629	4,273
Rest of World	3,704	–	1,035	108	3,217	8,064
Total BP share of capacity at 31 December 2009	7,419	2,997	2,150	417	4,846	17,829

^a Petrochemicals production capacity is the proven maximum sustainable daily rate (MSDR) multiplied by the number of days in the respective period, where MSDR is the highest average daily rate ever achieved over a sustained period.



Petrochemicals production^a

By geographical area	thousand tonnes				
	2005	2006	2007	2008	2009
US	3,891	3,464	4,328	3,487	3,110
Europe	4,322	4,146	3,617	3,257	3,455
Rest of World	5,863	6,454	6,083	5,774	5,826
	14,076	14,064	14,028	12,518	12,391

^a Comprises actual production in respect of the products listed in the capacity table above.



Refinery throughputs and utilization

Refinery throughputs^a

	thousand barrels per day				
	2005	2006	2007	2008	2009
US	1,255	1,110	1,064	1,121	1,238
Europe	847	813	758	739	755
Rest of World	297	275	305	295	294
	2,399	2,198	2,127	2,155	2,287
Crude distillation capacity at 31 December	2,832	2,823	2,769	2,678	2,666
Refinery capacity utilization ^b	85%	78%	77%	81%	86%

^a Refinery throughputs reflect crude and other feedstock volumes.

^b Refinery utilization is annual throughput divided by crude distillation capacity, expressed as a percentage.

Crude oil input

					%
	2005	2006	2007	2008	2009
Low sulphur crude	52	45	41	31	34
High sulphur crude	48	55	59	69	66

Refinery yield^a

	thousand barrels per day				
	2005	2006	2007	2008	2009
Aviation fuels	241	216	231	268	276
Gasolines	940	874	788	757	818
Middle distillates	715	626	607	631	674
Fuel oil	133	136	115	127	123
Other products	474	432	390	414	447
	2,503	2,284	2,131	2,197	2,338

^a Refinery yields exceed throughputs because of volumetric expansion.



Refineries

Refinery capacities

		thousand barrels per day															
		Crude distillation capacities ^a										Major upgrading plant capacities ^b					
		Group interest % ^c	Total	BP share	Vacuum distillation	Fluid catalytic cracking	Hydro-cracking	Catalytic reforming	Alkylation and polymerization	Hydrotreating gasolene and naptha	Hydrotreating jet dist and heavier	Visbreaking	Coker	Aromatics and isomerization	Asphalt	Hydrogen	Other ^d Nelson Complexity Index ^e
Wholly and partly owned refineries at 31 December 2009																	
US																	
California	Carson ^f	100.0	265	265	140	103	50	52	17	106	136	–	71	31	–	133	– 13.3
Washington	Cherry Point ^f	100.0	234	234	106	–	65	65	–	97	48	–	58	24	–	134	– 10.1
Indiana	Whiting ^f	100.0	405	405	190	165	–	64	25	121	205	–	34	26	30	59	– 9.5
Ohio	Toledo ^f	50.0	160	80	36	27	16	22	6	20	33	–	17	–	5	28	– 10.5
Texas	Texas City ^f	100.0	475	475	237	209	130	138	55	161	243	–	43	95	–	60	– 14.7
			1,539	1,459	709	504	261	341	103	505	665	–	223	176	35	414	– 12.0
Europe																	
Germany	Bayernoil	22.5	215	48	18	11	10	9	–	17	21	3	–	–	–	44	1 8.6
	Gelsenkirchen ^f	50.0	266	133	80	14	29	16	–	36	51	10	16	10	8	105	– 9.3
	Karlsruhe	12.0	323	39	16	10	–	7	2	12	29	–	4	2	–	–	1 9.1
	Lingen ^f	100.0	93	93	43	–	28	31	–	33	45	–	23	25	–	128	– 14.4
	Schwedt	18.8	226	42	29	11	–	7	2	17	35	10	–	5	1	8	1 11.2
Netherlands	Rotterdam ^f	100.0	386	386	87	60	–	30	9	64	272	36	–	–	–	14	3 5.6
Spain	Castellón ^f	100.0	110	110	47	30	–	16	3	55	84	–	20	19	–	86	– 12.2
			1,619	851	320	136	67	116	16	234	537	59	63	61	9	385	6 8.6
Rest of World																	
Australia	Bulwer ^f	100.0	102	102	39	23	20	16	3	20	43	–	–	–	3	35	– 7.3
	Kwinana ^f	100.0	137	137	22	35	–	24	6	49	49	–	–	15	2	–	– 7.6
New Zealand	Whangarei	23.7	112	27	9	–	7	6	–	10	10	–	–	–	1	14	– 7.0
South Africa	Durban	50.0	180	90	28	19	–	17	1	24	43	–	–	5	–	18	2 8.1
			531	356	98	77	27	63	10	103	145	–	–	20	6	67	2 7.6
			3,689	2,666	1,127	717	355	520	129	842	1,347	59	286	257	50	866	8 10.3

^aCrude distillation capacity is gross-rated capacity, as defined by Solomon Associates – the highest average sustained unit rate for a consecutive 30-day period.

^bThese are shown as BP share of capacities; BP has varying interests.

^cBP share of equity, which is not necessarily the same as BP share of processing entitlements.

^dOther consists of ethyl, methyl tertiary butyl ether and lubricants units.

^eNelson Complexity Index is calculated as defined by the *Oil and Gas Journal* survey 2010. In general, the higher a refinery's Nelson Complexity Index, the greater that refinery's ability to make higher-value products from a given feedstock.

^fIndicates refineries operated by BP.

Regional refining distillation capacity

	thousand barrels per day				
	2005	2006	2007	2008	2009
USGC	475	475	475	475	475
USMW	560	560	560	483	485
USWC	492	497	500	500	499
Total US	1,527	1,532	1,535	1,458	1,459
Europe	939	922	866	851	851
Rest of World	366	369	368	369	356
Total	2,832	2,823	2,769	2,678	2,666



Retail sites^{a,b}

	at 31 December				
	2005	2006	2007	2008	2009
US	12,800	12,300	12,200	11,700	11,500
Europe	9,200	9,000	8,600	8,600	8,600
Rest of World	2,600	2,600	2,500	2,300	2,300
	24,600	23,900	23,300	22,600	22,400

^aThe number of retail sites includes sites not operated by BP but instead operated by dealers, jobbers, franchisees or brand licencees that operate under a BP brand. These may move to or from the BP brand as their fuel supply or brand licence agreements expire and are renegotiated in the normal course of business.

^bExcludes our interest in equity-accounted entities that are dual branded.



Oil sales volumes^a

	thousand barrels per day				
	2005	2006	2007	2008	2009
Refined product marketing sales volumes by region					
US					
Aviation fuels	196	176	165	178	173
Gasolines	1,044	1,049	1,052	1,015	1,010
Middle distillates	307	296	260	201	186
Fuel oil	30	31	28	33	30
Other products	57	43	28	33	27
	1,634	1,595	1,533	1,460	1,426
Europe					
Aviation fuels	215	218	223	220	231
Gasolines	417	409	384	337	324
Middle distillates	751	741	711	719	670
Fuel oil	170	196	202	180	158
Other products	156	132	113	110	121
	1,709	1,696	1,633	1,566	1,504
Rest of World					
Aviation fuels	88	94	102	103	91
Gasolines	142	145	136	148	110
Middle distillates	127	133	148	135	156
Fuel oil	179	161	199	247	230
Other products	63	48	55	52	43
	599	581	640	685	630
Total marketing sales volumes by product					
Aviation fuels	499	488	490	501	495
Gasolines	1,603	1,603	1,572	1,500	1,444
Middle distillates	1,185	1,170	1,119	1,055	1,012
Fuel oil	379	388	429	460	418
Other products	276	223	196	195	191
Total marketing sales ^b	3,942	3,872	3,806	3,711	3,560
Trading/supply sales ^c	1,946	1,929	1,818	1,987	2,327
Total refined product sales	5,888	5,801	5,624	5,698	5,887
Crude oil sales	2,464	2,110	1,885	1,689	1,824
Total oil sales	8,352	7,911	7,509	7,387	7,711

Sales and other operating revenues from marketing sales of refined product

	\$ million				
	2005	2006	2007	2008	2009
US	63,363	71,175	76,898	93,764	63,442
Europe	69,956	79,327	87,719	114,522	71,189
Rest of World	21,779	27,493	30,362	40,275	31,457
	155,098	177,995	194,979	248,561	166,088

^aExcludes sales to other BP businesses and sales of petrochemicals products.

^bMarketing sales are sales of refined products to service stations, end-consumers, bulk buyers and jobbers (i.e. third parties who own networks of a number of service stations and small resellers).

^cTrading/supply sales are sales of refined products to large unbranded resellers and other oil companies.

