

Rating: Buy  
S&P 500: 1188

## **Norsk Hydro ASA** **Oil, Natural Gas and Aluminum**

<i>Symbol</i>	NHY	<i>Ebitda Next Twelve Months ending 12/31/05 (US\$mm)</i>	5,040
<i>Rating</i>	Buy	<i>North American Natural Gas/Ebitda (%)</i>	0
<i>Price (\$/sh)</i>	76.25	<i>Natural Gas and Oil Production/Ebitda (%)</i>	62
<i>Pricing Date</i>	1/12/05	<i>Adjusted Reserves/Production NTM</i>	8.9
<i>Shares (mm)</i>	254	<i>EV/Ebitda</i>	4.8
<i>Market Capitalization (\$mm)</i>	19,400	<i>PV/Ebitda</i>	5.5
<i>Debt (\$mm)</i>	4,800	<i>Undeveloped Reserves (%)</i>	30
<i>Enterprise Value (EV) (\$mm)</i>	24,200	<i>Natural Gas and Oil Ebitda (\$/boe)</i>	15.10
<i>Present Value (PV) (\$mm)</i>	27,700	<i>Present Value Proven Reserves(\$/boe)</i>	8.00
<i>Net Present Value (\$/share)</i>	90	<i>Present Value Proven Reserves(\$/mcf)</i>	1.30
<i>Debt/Present Value</i>	0.17	<i>Earnings Next Twelve Months (US\$/sh)</i>	6.14
<i>McDep Ratio - EV/PV</i>	0.87	<i>Price/Earnings Next Twelve Months</i>	12
<i>Dividend Yield (%/year)</i>	2.3	<i>Indicated Annual Dividend (US\$/sh)</i>	1.75

Note: Estimated cash flow and earnings tied to one-year futures prices for oil.

Reported results may vary widely from estimates. Estimated present value per share revised only infrequently.

The Norwegian government owns 44% of the shares in Norsk Hydro.

### **Summary and Recommendation**

After its historic separation of agribusiness into an independent entity in 2004, buy-recommended **Norsk Hydro ASA (NHY)** offers concentrated exposure to the rising commodity price appeal of oil, natural gas and aluminum. Investors can gain from the diversification of non-U.S. domicile at a time of currency uncertainty without the higher risk of emerging market domicile as in China and Russia. Norsk Hydro's aluminum operations, third most important after Alcoa and Alcan, seem to be valued near the same low cash flow multiple as oil and gas. At our standard assumption of \$35 for Light, Sweet Crude Oil the stock has 18% appreciation potential to estimated net present value of \$90 a share.

### **Unique Combination of Energy and Aluminum**

We see natural gas accounting for 19% of value; oil, 44%; and everything else, primarily aluminum, 38% (see table Functional Cash Flow and Present Value). While the presence of aluminum is unique, the concentration on oil and gas production is typical for an integrated oil company. The difference is that where NHY has aluminum, another company might have a downstream oil business of comparable importance.

The present value to cash flow multiple, PV/Ebitda, appears in line with the current correlation for thirty companies. That relationship presumes that the whole company is in oil and gas production with the reserve life as estimated. Typically we have also valued downstream operations at similarly low multiples. Without more detailed comparisons with other aluminum companies we have valued the aluminum business on a comparably conservative cash flow multiple as for oil downstream. Upon a quick check it looks like the current unlevered market value, or Enterprise Value, of Alcoa is about ten times unlevered cash flow.

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**Norsk Hydro**  
**Functional Cash Flow and Present Value**

	<i>NTM Ebitda</i> <i>(US\$mm)</i>	<i>Adjusted</i> <i>R/P</i>	<i>PV/</i> <i>Ebitda</i>	<i>Present</i> <i>Value</i> <i>(US\$mm)</i>	
Natural Gas	630	16.6	8.2	5,200	19%
Oil	2,480	6.0	4.9	12,100	44%
Aluminum	1,930	-	5.4	10,400	38%
	5,040	8.9	5.5	27,700	100%
Debt (US\$mm)					4,800
Net Present Value (US\$mm)					22,900
Shares (mm)					254
Net Present Value (US\$/sh)					90

**Stock Price Compensates for High Oil Tax**

Though taxes are high at an overall corporate rate of 70%, cash flow still grows with higher oil price (see table Next Twelve Months Operating and Financial Results). Price gains are shared by the company and the government by a fixed percentage that does not change simply because of price as we understand it. One could say that the traditional low cash flow multiple for Norsk Hydro stock reflects the high tax rate. The multiple that we calculate is still low after we decrease cash flow by an amount to reflect the difference above a 35% tax rate (see earlier analyses archived on [www.mcdep.com](http://www.mcdep.com) for more detail).

**Aluminum Prices Also Rising**

There is a new line in the price section of our quarterly model to track spot aluminum quotes on the *London Metals Exchange* in dollars per metric ton. Though not rising as much as oil, aluminum prices have been advancing in recent years to record levels. There may be a relationship between higher aluminum price and higher cash flow from the aluminum business depending on other factors.

It takes large quantities of electricity to extract aluminum from its ore. As a result the pure metal might be considered “packaged energy”. If the value of energy goes up on a sustained basis and economic growth remains positive, the value of existing aluminum should go up. In the aluminum “package”, energy can be transported economically. As a result aluminum should not be extracted in consuming areas where energy costs are high. Instead, aluminum should be extracted where energy costs are low as in the Middle East.

Indeed Norsk Hydro is embarking on an aluminum extraction plant in Qatar and is shutting down older facilities near markets where energy costs are high. Qatar has the world’s largest natural gas field that has little value unless the gas can be transported in liquefied or another form. In this case the natural gas would be used to generate electricity to extract aluminum. The aluminum would be transported relatively economically to a consuming area. To some extent the aluminum from the Middle East might displace aluminum extracted in a consuming area and free the electricity otherwise dedicated to the displaced aluminum for other uses.

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**Norsk Hydro**  
**Next Twelve Months Operating and Financial Estimates**

	<i>Q1</i>	<i>Q2</i>	<i>Q3</i>	<i>Q4E</i>	<i>Year</i>	<i>Q1E</i>	<i>Q2E</i>	<i>Q3E</i>	<i>Q4E</i>	<i>Next Twelve Months</i>
	<i>3/31/04</i>	<i>6/30/04</i>	<i>9/30/04</i>	<i>12/31/04</i>	<i>2004E</i>	<i>3/31/05</i>	<i>6/30/05</i>	<i>9/30/05</i>	<i>12/31/05</i>	<i>12/31/05</i>
<b>Volume</b>										
Natural Gas (mmcf/d)	1,038	882	738	996	<b>913</b>	1,038	882	738	996	<b>913</b>
Oil (mbd)	442	422	391	422	<b>419</b>	422	422	380	422	<b>411</b>
Total gas & oil (mbd)	615	569	514	588	<b>571</b>	595	569	503	588	<b>564</b>
<b>Price</b>										
Natural gas (NOK/mcf)	31	28	30	30	<b>30</b>	30	30	30	30	<b>30</b>
Natural gas (NOK/Sm3)	1.10	0.98	1.07	1.07	<b>0.85</b>	1.07	1.07	1.07	1.07	<b>0.86</b>
Oil										
WTI Cushing US\$/bbl)	35.23	38.34	43.89	48.30	<b>41.44</b>	45.35	44.89	43.87	42.93	<b>44.26</b>
Kroner/\$	6.91	6.85	6.87	6.28	<b>6.73</b>	6.28	6.28	6.28	6.28	<b>6.28</b>
WTI Cushing (NOK/bbl)	243	263	302	303	<b>279</b>	285	282	275	269	<b>278</b>
NHY (NOK/bbl)	218	238	286	288	<b>257</b>	270	267	261	256	<b>264</b>
Total gas & oil (NOK/bb)	209	220	261	258	<b>236</b>	244	245	242	235	<b>242</b>
Aluminum (US\$/tonne)	1,685	1,684	1,746	1,889	<b>1,751</b>	1,889	1,889	1,889	1,889	<b>1,889</b>
<b>Revenue (NOKmm)</b>										
Natural Gas	2,911	2,253	2,058	2,778	<b>9,999</b>	2,832	2,460	2,058	2,778	<b>10,127</b>
Oil	8,684	9,240	10,295	11,168	<b>39,388</b>	10,259	10,380	9,136	9,927	<b>39,702</b>
Other	30,914	29,010	28,233	28,233	<b>116,390</b>	28,233	23,233	23,233	23,233	<b>97,931</b>
Total	39,598	38,250	38,528	42,179	<b>158,555</b>	41,323	36,072	34,427	35,938	<b>147,760</b>
<b>Expense</b>										
Production	5,047	6,863	7,510	7,994	<b>27,414</b>	7,749	7,675	7,183	7,668	<b>30,274</b>
Other	27,792	25,769	25,521	25,208	<b>104,290</b>	25,208	20,208	20,208	20,208	<b>85,831</b>
Total	32,838	32,632	33,031	33,202	<b>131,704</b>	32,957	27,883	27,391	27,876	<b>116,106</b>
<b>Ebitda (NOKmm)</b>										
Exploration and Production	6,548	4,630	4,843	5,952	<b>21,973</b>	5,342	5,165	4,011	5,037	<b>19,555</b>
Other	3,122	3,241	2,711	3,025	<b>12,100</b>	3,025	3,025	3,025	3,025	<b>12,100</b>
Total Ebitda	9,671	7,871	7,555	8,977	<b>34,073</b>	8,367	8,190	7,036	8,062	<b>31,655</b>
Exploration	249	199	298	298	<b>1,044</b>	298	298	298	298	<b>1,192</b>
Deprec., Deplet., & Amort.	3,696	3,592	3,533	3,533	<b>14,354</b>	3,533	3,533	3,533	3,533	<b>14,132</b>
<b>Ebit</b>	5,726	4,080	3,724	5,146	<b>18,675</b>	4,536	4,359	3,205	4,231	<b>16,331</b>
Interest	433	434	316	316	<b>1,499</b>	316	316	316	316	<b>1,264</b>
Foreign Exchange	454	226	(424)							
<b>Ebt</b>	4,839	3,420	3,832	4,830	<b>16,920</b>	4,220	4,043	2,889	3,915	<b>15,067</b>
Income Tax	1,694	1,197	1,341	1,690	<b>5,922</b>	1,477	1,415	1,011	1,370	<b>5,273</b>
<b>Net Income (NOKmm)</b>										
Exploration and Production	7,082	7,184	7,521							
Other Operations	1,629	1,371	526							
Non operating deductions	(5,566)	(6,332)	(5,556)							
Total	3,145	2,223	2,491	3,139	<b>10,998</b>	2,743	2,628	1,878	2,545	<b>9,793</b>
<b>Shares (millions)</b>	256	256	254	254	<b>255</b>	254	254	254	254	<b>254</b>
Per share (NOK)	12.30	8.70	9.80	12.35	<b>43.15</b>	10.79	10.34	7.39	10.01	<b>38.54</b>
Ebitda Margin (E&P)	56%	40%	39%	43%	<b>44%</b>	41%	40%	36%	40%	<b>39%</b>
Tax Rate	35%	35%	35%	35%	<b>35%</b>	35%	35%	35%	35%	<b>35%</b>

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### Competitive Value among Large Cap and Mid Cap Producer/Refiners

NHY stock appears to have attractive potential in an attractive group for investment (see table of stocks ranked by McDep Ratio).

	<i>Symbol/</i>		<i>Price</i>		<i>Market</i>	<i>Net</i>	<i>Debt/</i>	
	<i>Rating</i>		<i>12-Jan</i>	<i>Shares</i>	<i>Cap</i>	<i>Present</i>	<i>Present</i>	<i>McDep</i>
			<i>2005</i>	<i>(mm)</i>	<i>(\$mm)</i>	<i>Value</i>	<i>Value</i>	<i>Ratio</i>
<b>Producer/Refiners - Large Cap and Mid Cap</b>								
Kinder Morgan, Inc.	KMI	S2	72.81	125	9,080	20.00	0.74	1.69
Imperial Oil Limited (30%)	IMO	B3	58.58	107	6,260	58.00	0.10	1.01
Marathon Oil Corporation	MRO	B3	37.90	347	13,150	40.00	0.31	0.96
Norsk Hydro ASA	NHY	B1	76.25	254	19,380	90.00	0.17	0.87
ConocoPhillips	COP	B1	87.27	702	61,200	110.00	0.25	0.84
Suncor Energy	SU	B3	34.09	460	15,680	42.00	0.12	0.83
Petro-Canada	PCZ	B3	49.74	269	13,400	68.00	0.18	0.78
PetroChina Company Ltd (10%)	PTR	B2	52.65	176	9,260	82.00	0.06	0.66
Lukoil Oil Company	LUKOY	B2	119.25	209	25,000	208.00	0.03	0.59
<i>Total or Median</i>					<i>172,000</i>		<i>0.17</i>	<i>0.84</i>

B1 = Buy full unlevered position, B2 = Buy half unlevered position, B3 = Alternative buy

S2 = Short half unlevered position, S3 = Short quarter unlevered position

McDep Ratio = Market cap and Debt to present value of oil and gas and other businesses

### Buy Oil and Gas Producers at Mid Decade

Three to five-fold gain potential for oil and gas price over the next 5 to 13 years justifies investment in recommended oil and gas producers, in our opinion. Supporting improving prospects, the average futures price of oil for continuous delivery over the next six years is in a multi-year uptrend as defined by the current quotes above the 40-week average. The current benchmark oil average futures price for the next six years is about \$40 a barrel. That is higher than our estimate that current stock price of NHY reflects a constant real oil price of perhaps \$30 a barrel.

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