# MARSHALLS ENERGY COMPANY ANALYSIS
# (Republic of the Marshall Islands: Public Sector Program)

## A. Background

1. Marshalls Energy Company's (MEC) principal lines of business are predominantly the generation and transmission of electricity and the buying and selling of petroleum products. Other lines of business include the rental of equipment and accommodation facilities. The principal markets for the generation and transmission of electricity are government agencies, businesses and residential customers on Majuro, Jaluit & Wotje. Petroleum products are sold primarily to foreign and domestic fishing vessels. MEC has been a major economic driving force in Majuro and many of the other islands in the Republic of the Marshall Islands (RMI) in terms of reliable, low cost electricity, technical training and economic engine.

2. MEC controls six power plants (75 kW to 13 MW) located on 5 different islands, and provides support services to three small power plants on other islands. Additionally, MEC oversees the operation of the various water and sewer operations located on several islands. It is also responsible for implementing a nationwide renewable energy program covering 27 atolls.

3. MEC faces perennial problems of corrosion of the electric system, wind, weather, and training of personnel and scarcity of replacement parts associated with island environment. MEC has had to face many challenge in recent years including management change in 2007, Mobil Oil's decision in early 2004 to discontinue the sale of fuel to MEC on a consignment basis which required MEC to seek other sources of funding for $6 to $8 million of diesel fuel inventory, decline in profit (about $2 million or 20% of MEC's electric system revenues) from sale of fuel from fishing vessels used to subsidize electric system cost and payment obligations on high interest loans (e.g., loans from Mobil Oil carrying interest charge of 18%) for fuel purchase.[1] The 2008 fuel crisis pushed MEC towards insolvency. The company now requires continual cash transfers and advances from the national government, which has placed additional pressure on an already stressed fiscal system.[2] In depth diagnoses of MEC's financial and operational performance in 2008 and 2009 have revealed numerous long-standing problems that were not adequately addressed in years past. Financial ratios are deteriorating. Asset management is an area of concern. MEC has been incurring operational losses in recent years. Long term debts are unsustainable under current terms. No financial management information produced. There is no proper annual budget process. No budgetary control is exercised. No within-year revised out-turn forecasts are produced and so the annual results as given in the audited accounts are a surprise to everyone. There is also no quantification of losses. Underperformance of MEC can be attributed to management deficiency, poor incentive and governing structure, lack of transparency in staff, management and board appointments, conflicting mandate between commercial operation and social services, inadequate legal and regulatory environment, political influence/interference in day-to-day running, inflexible pricing controlled by political interest leading to below true cost pricing, and disincentive to reform due to the culture of 'bailout'. Performance indicators of MEC for the period FY1999-FY2008 are in Table 1.

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[1] See, Robert E. Nelson and Michael A. Conduff Associate, *Marshalls Energy Company, Majuro, Republic of the Marshall Islands: Strategic Financial Plan and Performance Audit Review*, January 2006.

[2] B. Graham and L. Alik. 2010. *Revisiting the Marshall Islands Reform Agenda: A Review of 11 Public Enterprises and Options for Reform*. Majuro; and ADB. 2009. *Technical Assistance to the Republic of the Marshall Islands for Responding to the Financial Crisis*. Manila (February).

**Table 1: MEC Financial Performance**

| Financial Indicators | FY2003 | FY2004 | FY2005 | FY2006 | FY2007 | FY2008 |
|---|---|---|---|---|---|---|
| Operating Revenue ($) | 9,614,251 | | | | 15,200,216 | 19,598,520 |
| Operating Expenses ($) | 11,152,722 | | | | 18,095,754 | 22,542,401 |
| Operating Income (loss) ($) | (600,736) | (1,378,809) | (3,209,725) | (3,894,280) | (2,895,538) | (2,943,881) |
| Change in net assets ($) | 596,588 | (1,841,431) | (3,165,938) | (4,042,966) | (3,632,581) | (4,096,103) |
| RMI Subsidies/Capital Contributions/Transfers ($) | | - | - | 820,000 | 874,250 | 355,618 |
| Total Assets ($) | 18,417,048 | 17,656,381 | 16,246,513 | 17,761,375 | 20,615,125 | 18,552,666 |
| Current Assets ($) | 5,300,473 | 5,379,672 | 4,719,675 | 6,796,585 | 10,689,710 | 9,073,480 |
| Cash (and cash equivalents) ($) | 713,310 | 709,863 | 712,274 | 1,842,380 | 4,186,044 | 1,235,531 |
| Total Liabilities ($) | 12,616,960 | 13,697,724 | 15,453,794 | 21,011,622 | 27,497,953 | 29,531,598 |
| Current Liabilities ($) | 2,835,940 | 4,405,685 | 6,549,877 | 8,305,482 | 9,302,997 | 13,142,299 |
| Equity/Net Assets ($) | 5,800,088 | 3,958,657 | 792,719 | (3,250,247) | (6,882,828) | (10,978,932) |
| Current ratio ($) | 1.87 | 1.22 | 0.72 | 0.82 | 1.15 | 0.69 |
| Cash ratio ($) | 0.25 | 0.16 | 0.11 | 0.22 | 0.45 | 0.09 |
| **Rate of return on equity (%)** | **(0.10)** | **(0.35)** | **(4.05)** | **n.a** | **n.a** | **n.a** |
| **Rate of return on asset (%)** | **(0.03)** | **(0.08)** | **(0.20)** | **n.a** | **n.a** | **n.a** |
| | | | | | | |
| **Other Indicators** | | | | | | |
| Transfers (including subsidies and capital transfers) ($) | 1,867,000 | 205,000 | 400,000 | 1,470,000 | 874,000 | 356,000 |
| Transfers treated as current subsidies in GDP estimates ($) | 934,000 | - | - | 420,000 | 874,000 | 356,000 |

n.a. = not applicable, FY = Fiscal Year
Source: B. Graham and L. Alik. 2010. *Revisiting the Marshall Islands Reform Agenda: A Review of 11 Public Enterprises and Options for Reform*. Majuro; and ADB. 2009. *Technical Assistance to the Republic of the Marshall Islands for Responding to the Financial Crisis*. Manila (February).

## B. Financial Ratios

4. Most alarming problems are financial ratios. MEC's liquidity ratios are generally weak. The current ratio has fallen below 1.0 for three of the past four years between FY2005 and FY2008 and the cash ratio is extremely weak, with only 9 cents of cash and cash equivalents available on-hand for every one dollar of current liabilities as of end FY2008. MEC has seen three straight years of negative cash flow between FY2005 and FY2008 ($6.3 million negative balance in 2008) from its core operating activities, resulting in sharp decline in the operating cash flow (OCF) ratio implying that the company is not generating enough cash to cover its current liabilities. MEC's net working capital balance at year end FY2008 was the lowest ever.

## B. Asset Management

5. The book (depreciated) values of MEC's core operating assets have steadily fallen over the decade, and there has been insufficient re-investment and capital replacement. The generating equipment has a nameplate capacity of 28.1 megawatt-hours (MWh), but fire damage and poor maintenance have reduced the available to capacity to only 42% of this, at 11.8 MWh (Table 2). Substantial maintenance is required to bring generating capacity back to a level that will provide sufficient reserve capacity to ensure system stability and to allow a normal outage and maintenance schedule. The total cost of outstanding maintenance on the generators is $10.225 million. The total cost of outstanding maintenance on the generation systems and the distribution system (e.g., cable repairs, transformer maintenance and maintenance of end-user systems) is estimated at $5.500 million.

**Table 2: Status of Generating Equipment**

| Engine | Make | Status | Original rating (MWh) | Current rating (MWh) | Required maintenance ($'000) |
|---|---|---|---|---|---|
| 1 | Pielstik | Major repairs needed | 3.0 | 1.8 | 1.000 |
| 2 | Pielstik | Rebuild completed | 3.0 | 2.8 | 0.825 |
| 3 | Pielstik | Fire Damaged, total rebuild required | 3.0 | 0 | 1.700 |
| 4 | Pielstik | Fire Damaged, total rebuild required | 3.0 | 0 | 1.600 |
| 5 | Caterpillar | Completed | 3.3 | 2.5 | 1.200 |
| 6 | Deutz | Rebuild underway | 6.4 | 0 | 1.700 |
| 7 | Deutz | Rebuild required | 6.4 | 4.7 | 2.200 |
| Total | | | 28.1 | 11.8 | **10.225** |

Mwh = megawatt hour.
Source: MEC.

6. MEC has historically run very high accounts receivables balances over the years currently estimated at over $7 million. There is no assessment as to how much of it is actually collectible. Educated guess is probably no more than one-half. The balance needs to be removed from the book which will further worsen the current ratio. MEC was able to reduce collection period from 141 days to 82 days between FY2000 and FY2007 but tariff increases reversed the turned which is likely to be further accentuated with the application of the new tariff template designed to recover total fuel cost unless countervailing measure are taken to improve collection efficiency. MEC's current system loss is high at about 30% as reflected in the low billing ratio (billed to generated MWh) due to avoidable, unavoidable, technical and non-technical reasons (including streetlights that are not billed, theft, and other loss areas).

## C. Profitability

7. The company's electricity revenues have consistently fallen short of core operating (generation and distribution) costs. In FY2008, MEC electric revenues totaled $18.4 million while its generation and distribution costs alone (excluding administration and other overheads) totaled $19.6 million. Recent tariff adjustments will help recover fuel costs but other changes must also be considered to reduce the overall cost structure of MEC. MEC's diesel fuel business (through its tank farm) has returned high profit margins, which were then used to cross-subsidize other operations. However, as indicated earlier, volumes fell sharply beginning in FY2006. Volume increased in FY2008 but margin was low. Like its margins on the diesel fuel sales, MEC's margins on its liquefied petroleum gas (LPG) sales have also fallen sharply in recent years. The Jaluit power system has run average annual loss of $343,000 over the past eight years which is not covered by the subsidy from the government forcing MEC to absorb the net losses. Wotje has also run net operating losses over the years, although its losses have steadily declined since FY2005 and the Government has (according to audit data) over-subsidized the operation for the past three years. Companywide, MEC has been operating at a loss for five straight years in a row. In fact, FY2001 was the first year that MEC entered the red, but the next two years saw positive results due largely to the energy grants, which had the artificial effect of pushing up "other income." MEC's return on assets is highly negative. MEC's residential customer base (including lifeline customers) has grown steadily from under 3,000 to over 3,400 over the decade. However, the Economic Policy, Planning and Statistics Office (EPPSO) estimates that as of 2009 there are over 4,000 households on Majuro alone, suggesting that there remain at least several hundred households that is not on the grid. The commercial and government base has been fairly stable over time at just over 300 and 100,

respectively. Residential demand constitutes 43%, commercial 41% and government 16%. As world oil prices have risen, so too have tariffs, with the weighted average residential tariff increasing by 162% over the five year period (FY2004-FY2008).

## D. Long Term Debt

8. MEC's long term debt as of 30 September 2009 comprises two commercial loans: approximately $ 6.996 million to Federal Financing Bank (FFB)/Rural Utilities Service (RUS) at and $8.6 million to the Bank of Guam (BOG).

9. On 18 November 1997, MEC entered into a loan agreement with the FFB in the amount of $12.5 million for the construction of a new power plant, with loan repayments guaranteed by the RUS. Interest rates are calculated based on the FFB rates at the date of the loan advances and range from 5.49% to 7.25% per annum. Principal and interest are payable in quarterly installments of $273,770 through 2 January 2018. The mortgage notes have been unconditionally guaranteed by RMI, under which RMI will make debt service payments to RUS in the event of default by MEC, and have been collateralized by a leasehold mortgage and security agreement over the assets of MEC. These notes are subject to two “operating cash” based ratio requirements. MEC was not in compliance with these ratio requirements in FY2007, FY2008 and FY2009.

10. On 25 May 2007, MEC obtained a bank loan of $12 million from BOG to refinance debts to a fuel supplier and a commercial bank and to finance working capital requirements. The loan is amortized over a period of 10 years but matures in 3 years (i.e., on 31 May 2010). Interest is calculated at 1.75% over the bank's reference rate with a minimum rate of 6.5%. Interest has averaged approximately 7% over the 3 years to date. Principal and interest are payable in monthly equal payments of $160,000 to 1 May 2010. The loan is guaranteed, unconditionally by RMI and under the terms of the loan agreement, BOG which holds all RMI and MEC Bank accounts have the right to take payment from any available RMI bank accounts. MEC does not have the cash to pay back BOG loan by the stipulated date and runs the risk of default unless the loan is rolled over, possibly at a higher interest rate by BOG or MEC has access to alternative financing on acceptable terms to liquidate its loan with BOG.

## E. MEC Comprehensive Reform Program

11. In 2008, the MEC Board and management adopted a series of reform measures and began drafting a Comprehensive Recovery Plan. These measures will require at least two to three years for full implementation. Table 3 presented baseline estimates of the resultant improvement in MEC's financial position. They will change considerably with successful implementation of reform measures. For example, a program to reduce non-technical losses by at least a third (i.e., 10% of total system losses) would yield over $1 million additional revenue per year, and a 10% reduction in annual costs would save approximately $0.4 million.

12. The reform priorities include the review and update of company asset management. Over the short term, MEC proposes to focus on application of new tariff template, streamlining the Board and financial performance, expenditure review with a view to reducing non-essential expenditures, fuel sales and improving collection of receivables. Medium term actions are designed to address governance and management structure, debt management, audit and system losses. Longer term reform measures include prepaid/debit metering system, overhaul of the main generators, improve organizational and personnel management and addressing

water and sewage problems. The PSRP is designed to support government's reform initiative with regard to MEC.

13. The counterpart funds generated by the loan to accompany the Public Sector Program will be on-lent to MEC by the Ministry of Finance (MOF) under a subsidiary loan agreement. The reforms inclusive of debt restructuring will generate a higher operational surplus and approximately $1.5 million in additional cash flow per annum from FY2011 to FY2013 (Table 3). This will be utilized (i) to cover MEC's debt servicing liability arising from the new loan from MOF (a debt repayment Sinking Fund will be established to hold funds earmarked for debt servicing) and (ii) to help finance repair and maintenance expenditures estimated at approximately $3.0 million per annum from FY2011 to FY2013.

**Table 3: MEC Financial Projections** ($ '000)

| Item | FY2010 | FY2011 | FY2012 | FY2013 |
|---|---|---|---|---|
| **Operations with on-lent concessional loan**[1] | | | | |
| Total Revenue | 15,913 | 17,100 | 18,288 | 20,304 |
| Total Operations expenses | (18,187) | (19,034) | (19,115) | (19,597) |
| Operating Profit/Loss (before Interest payments) | (2,275) | (1,934) | (827) | 707 |
| Loan interest | (857) | (550) | (500) | (450) |
| Revenue net of cost from fuel and propane sales | 2,000 | 1,500 | 1,000 | 1,000 |
| Net profit/loss before RMI subsidy and Grants | (1,132) | (984) | (327) | 1,257 |
| Subsidy | 980 | 900 | 800 | 700 |
| Net Profit (Change in Net Assets) before capital expenditure and Debt repayment (interest and principal) | (152) | (84) | 473 | 1,957 |
| | | | | |
| **Cash Flow** | | | | |
| Provisions for depreciation and bad and doubtful debt) | 1,288 | 1,352 | 1,409 | 1,462 |
| Debt repayment to Rural Utility Services | (898) | (547) | (597) | (647) |
| Net cash flow | 239 | 721 | 1,285 | 2,772 |
| | | | | |
| **Total debt repayment** | | | | |
| Total debt repayment without on-lent concessional loan | (2,159) | (2,466) | (2,516) | (2,566) |
| Total debt repayment with concessional loan | (2,159) | (1,097) | (1,097) | (1,097) |
| | | | | |
| **Debt Repayment Sinking fund operation** | | | | |
| Transfer to debt repayment sinking fund | | 399 | 399 | 399 |
| Annual amount repaid to ADB | | (86) | (86) | (86) |
| Year-end balance | | 313 | 626 | 939 |

FY = fiscal year.

1. The projections assume: the on-lent concessional loan will fully replace the Bank of Guam loan, but does not factor in saving from the restructuring of the RUS loan; that the ADB grant funded project covering pre-paid metering, refurbishment of generation equipment and grid extension will commence in early 2011; tariffs will be increased quarterly to reflect changing fuel prices; no further increase in base tariff in either FY2010 and FY2011, then a 10% increase plus an increase equal to inflation in the preceding 12 months on 1 April 2012 and an increase equivalent to inflation in the preceding 12 months is implemented 1 April 2013; economic growth will remain low and therefore the consumer base will remain static over the period; cost of sales ( excluding Fuel) and other operating costs increase at the forecast rate of annual inflation during the period; a 5% increase in efficiency of fuel usage will be achieved as a result of the ADB grant funded program; and net profit on sales of diesel and propane gas will decline over time.

Source: Asian Development Bank estimates based on financial data supplied by MEC.