

# CHINA IN BURMA:

## THE INCREASING INVESTMENT OF CHINESE MULTINATIONAL CORPORATIONS IN BURMA'S HYDROPOWER, OIL AND NATURAL GAS, AND MINING SECTORS

UPDATED: September 2008



## ACKNOWLEDGEMENTS

EarthRights International would like to thank All Arakan Student & Youth Congress, Arakan Oil Watch, Burma Relief Center, Courier Research Associates, Images Asia E-Desk, Kachin Development Networking Group, Kachin Environmental Organization, Karen Rivers Watch, Karenni Development Research Group, Lahu National Development Organization, Mon Youth Progressive Organization, Palaung Youth Network Group, Salween Watch Coalition, Shan Sapawa and Shwe Gas Movement, for providing invaluable research assistance and support for this report.



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## INTRODUCTION

Amidst recent international interest in China's moves to secure resources throughout the world and recent events in Burma<sup>1</sup>, the international community has turned its attention to China's role in Burma. In September 2007, the violent suppression of a peaceful movement led by Buddhist monks in Burma following the military junta's decision to drastically raise fuel prices put the global spotlight on the political and economic relationships between China and neighboring resource-rich Burma.

EarthRights International (ERI) has identified at least 69 Chinese multinational corporations (MNCs) involved in at least 90 hydropower, oil and natural gas, and mining projects in Burma.<sup>2</sup> These recent findings build upon previous ERI research collected between May and August 2007 that identified 26 Chinese MNCs involved in 62 projects. These projects vary from small dams completed in the last two decades to planned oil and natural gas pipelines across Burma to southwest China. With no comprehensive information about these projects available in the public domain, the information included here has been pieced together from government statements, English and Chinese language news reports, and company press releases available on the internet. While concerned that details of the projects and their potential impacts have not been disclosed to affected communities of the general public, we hope that this information will stimulate additional discussion, research, and investigation into the involvement of Chinese MNCs in Burma.

Concerns over political repression in Burma have led many western governments to prohibit new trade with and investment in Burma, and have resulted in the departure of many western corporations from Burma; notable exceptions include Total of France and Chevron<sup>3</sup> of the United States. Meanwhile, as demand for energy pushes many Asian countries to look abroad for natural resources, Burma has been an attractive destination. India, Thailand, Korea, Singapore, and China are among the Asian countries with the largest investments in Burma's hydropower, oil and natural gas, and mining sectors.<sup>4</sup> Foreign direct investment (FDI) in Burma's oil and natural gas sectors, for example, more than tripled from 2006 to 2007, reaching US\$ 474.3 million, representing approximately 90% of all FDI in 2007.<sup>5</sup>

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<sup>1</sup> In 1989, the military regime changed the name of the country from Burma to Myanmar, the historical, Burmese-language name. The name Myanmar is not accepted by most opposition groups, who believe that the regime lacks legitimacy to engage in any government function, including changing the name of the country. This opposition includes the democratically elected National League for Democracy, headed by Nobel Peace Prize winner Aung San Suu Kyi, who refers to the country as Burma. The United States refers to the country as Burma, while the United Nations refers to it as Myanmar.

<sup>2</sup> Research for all three sectors was compiled by conducting an English and Chinese language online media review. Full details are included in *Summary of Completed, Current and Planned Hydropower, Oil and Natural Gas, and Mining Projects in Burma with Chinese Involvement*.

<sup>3</sup> Chevron is exempt from United States sanctions in Burma because of a grandfather clause which permits the continuation of already existing projects. For more information, see EarthRights International. 2008. *The Human Cost of Energy: Chevron's Continuing Role in the Financing Oppression & Profiting from Human Rights Abuses in Military-Ruled Burma (Myanmar)*. Available at <http://www.earthrights.org/publications>

<sup>4</sup> Official Myanmar government figures; calculations from United States Department of State. '2007 Investment Climate Statement – Burma.' <http://www.state.gov/e/eeb/ifd/2007/80685.htm>.

<sup>5</sup> 'Foreign Investment in Myanmar Oil & Gas Sectors More Than Tripled Last Year.' *The Associated Press*, 30 June 2008. [http://www.irrawaddy.org/article2.php?art\\_id=13054](http://www.irrawaddy.org/article2.php?art_id=13054)

While China has embraced a foreign policy of non-interference in the internal affairs of other states, the line between business and politics in a country like Burma is blurred at best. In pursuit of Burma's natural resources, China has provided Burma with political support,<sup>6</sup> military armaments,<sup>7</sup> and financial support in the form of conditions-free loans.<sup>8</sup> Investments in Burma's energy sectors provide billions of US dollars in financial support to the military junta, which devotes at least 40% of its budget to military spending,<sup>9</sup> only slightly more than 1% on healthcare, and around 5% on public education.<sup>10</sup> These kinds of economic and political support for the current military regime constitute a concrete involvement in Burma's internal affairs.

The following is a brief introduction to and summary of the major completed, current and planned hydropower, oil and natural gas, and mining projects in Burma with Chinese involvement. All information is based on Chinese and English language media available on the internet and likely represents only a fraction of China's actual investment.

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<sup>6</sup> 'China & Russia veto US/UK-backed Security Council Draft Resolution on Myanmar.' *United Nations Website*, 12 January 2007. <http://www.un.org/apps/news/story.asp?NewsID=21228&Cr=myanmar&Cr1>

<sup>7</sup> 'People's Republic of China: Sustaining Conflict & Human Rights Abuses.' *Amnesty International*, 11 June 2006.

<sup>8</sup> 'China to Provide Myanmar with US\$200m Loan.' *China Daily*, 11 June 2006. [http://www.chinadaily.com.cn/china/2006-06/11/content\\_613786.htm](http://www.chinadaily.com.cn/china/2006-06/11/content_613786.htm); & Amnesty International. 2006. *China: Secretive Arms Exports Stoking Conflict & Repression*.

<sup>9</sup> University of California at Berkeley Human Rights Center & Johns Hopkins Bloomberg School of Public Health Center for Health & Human Rights. 2007. '*The Gathering Storm: Infectious Diseases & Human Rights in Burma*,' p. 1. <http://www.hrcberkeley.org/pdfs/BurmaReport2007.pdf>; 'Misery Piled Upon Misery: Myanmar.' *The Economist*, 6 October 2007; & Sardellitti, E. 'Myanmar: Courted by the Asian Players.' *Power & Interest News Report*, 8 March 2007. [http://www.pinr.com/report.php?ac=view\\_report&report\\_id=627&language\\_id=1](http://www.pinr.com/report.php?ac=view_report&report_id=627&language_id=1);

<sup>10</sup> The U.S. State Department reports that the budget of Burma's Ministry of Health in 2007 was 0.3% of Gross Domestic Product (GDP). Available at <http://www.state.gov/e/eeb/ifd/2007/80685.htm>. Burma's budget represents about 20-25% of Burma's GDP. This means that expenditures, as a percentage of the budget, are four to five times their percentage of GDP. In the case of health care, that means expenditures are about 1.2-1.5% of the budget. For more information, see EarthRights International. 2008. *The Human Cost of Energy: Chevron's Continuing Role in the Financing Oppression & Profiting from Human Rights Abuses in Military-Ruled Burma (Myanmar)*, p. 22-23. Available at <http://www.earthrights.org/publications>

## CHINA'S INTEREST IN BURMA

In 1954, the People's Republic of China and Burma signed a joint declaration on the Five Principles of Peaceful Coexistence, a political philosophy which has since then theoretically defined China's relations with Burma.<sup>11</sup> These five principles are (1) mutual respect for sovereignty and territorial integrity, (2) mutual non-aggression, (3) non-interference in each other's internal affairs, (4) equality and mutual benefit, and (5) peaceful coexistence in developing diplomatic relations and economic and cultural exchanges.<sup>12</sup> As a young nation-state, these five principles set precedents for both China's growing international presence, and the international community's influence in China's sometimes fragile internal social and political structures.

Following economic reforms in the late 1970s, China adopted a more pragmatic foreign policy and, under the guidance of the Five Principles of Peaceful Coexistence, increased international economic and political exchanges in order to fuel economic and industrial development at home.<sup>13</sup> In doing so, China has opened itself to trade and investment around the world, including in controversial places like Burma and Sudan, under the belief that economic prosperity at home and abroad will lead to mutually beneficial political and social stability. Chinese foreign policy also generally holds that countries are entitled to determine their own social and political systems and development strategies as they see fit, without the intervention of other countries.<sup>14</sup> This preference for the use of soft power to achieve stability is characteristic of China's "peaceful rise" as a world power, and also reflects the internal changes China has experienced in the three decades since its own economic reforms.

As one of China's neighboring countries, Burma plays a strategic role in China's pursuit of regional economic, political and social stability. Moreover, Burma is geopolitically significant to China given its access to the Indian Ocean, and its extensive natural resources ranging from dense forests and untouched rivers to vast reserves of minerals, oil, and natural gas. The pursuit of such natural resources has become all the more important to China as its rapid industrialization and urbanization require an increasing amount of energy and raw materials. In particular, as China is now one of the world's top energy consumers,<sup>15</sup> Burma's oil and natural gas resources and the prospect of constructing dual pipelines from the Indian Ocean to carry imports of oil and natural gas from the Middle East, South America and Africa and avoid the dangerous Straits of Malacca<sup>16</sup> make Burma a particularly desirable partner in China's pursuit of energy security.

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<sup>11</sup> One day prior to signing this agreement with Burma, Chinese Premier Zhou Enlai signed the 'Agreement between the People's Republic of China and the Republic of India on Trade and Intercourse between Tibet Region of China and India', in which the Five Principles of Peaceful Coexistence were first introduced. For more information, see 'China's Initiation of the Five Principles of Peaceful Coexistence.' *Ministry of Foreign Affairs of the People's Republic of China*, 17 November 2000.

<http://www.fmprc.gov.cn/eng/ziliao/3602/3604/t18053.htm>

<sup>12</sup> Geng, L. 2006. 'Sino-Myanmar Relations: Analysis & Prospects.' In *The Culture Mandala*, Vol. 7, No. 2. <http://www.international-relations.com/CM7-2WB/Sino-Myanmar.htm>; & 'China's Foreign Policy.' *People's Daily*. <http://english.people.com.cn/china/19990914A128.html>

<sup>13</sup> Zou, K. 2003. 'China's Possible Role in Myanmar's National Reconciliation.' In *The Copenhagen Journal of Asian Studies*, Vol. 23, p. 62. <http://rauli.cbs.dk/index.php/cjas/article/viewFile/13/13>

<sup>14</sup> *Ibid.*

<sup>15</sup> China is currently the world's second largest consumer of oil, and the fourteenth largest consumer of natural gas. Statistics for both available at *NationMaster*. <http://www.nationmaster.com/cat/ene-energy>

<sup>16</sup> 90% of China's foreign trade and 80% of China's energy imports travel through the Straits of Malacca. Khalid, N. 2006. 'Security in the Straits of Malacca.' In *Japan Focus*. <http://japanfocus.org/products/details/2042>

Some Chinese MNCs defend their investments in Burma through the Five Principles of Peaceful Coexistence which draw a distinction between economic trade and politics. According to a spokesperson for China National Offshore Oil Co. (CNOOC), which has interests in several oil and natural gas blocks in Burma, "We, in the oil business, have no choice but to go to places with oil...a company is in business for profits, not for politics."<sup>17</sup> Such statements echo those made by western MNCs like Ivanhoe Mines,<sup>18</sup> Total,<sup>19</sup> and Chevron Corporation<sup>20</sup> who have come under sharp criticism for their role in Burma. For their part, these corporations have emphasized economics over politics and tout the benefits of their investment over any alleged negative impacts. At the same time, China's government has recently voiced increase concern about the situation in Burma, and has urged Burma's military leaders to "push forward a democracy process that is appropriate for the country",<sup>21</sup> while stressing that it is Burma's people who must decide Burma's future, not the international community.<sup>22</sup> From China's perspective, investment in Burma is mutually beneficial as it encourages economic development in both countries and promotes regional economic, political, and social stability.<sup>23</sup>

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<sup>17</sup> 'Myanmar Keeps the Wheels on with China's Help.' *The Wall Street Journal*, 24 June 2008.

[http://online.wsj.com/article/SB121424381094497175.html?mod=googlenews\\_wsj](http://online.wsj.com/article/SB121424381094497175.html?mod=googlenews_wsj)

<sup>18</sup> When questioned about Ivanhoe Mines' role in the Monywa Copper Project in Burma, company president Dan Kunz stated that Ivanhoe Mines is "not motivated by political considerations...Ivanhoe is in the mining business, not the political business." McClearn, M. 2002. 'Ivanhoe Mines Steps into the Crossfire.' In *Canadian Business*, Vol. 75, Issue 3. <http://www.minesandcommunities.org/article.php?a=863>

<sup>19</sup> Total has created a website to promote the benefits of its continued involvement in the Yadana Gas Pipeline Project. Available at <http://burma.total.com>

<sup>20</sup> 'Chevron Statement on Myanmar.' Chevron Website, 2 October 2007.

<http://www.chevron.com/news/press/Release/?id=2007-10-02>; for more information regarding Chevron, see EarthRights International. 2008. *The Human Cost of Energy: Chevron's Continuing Role in the Financing Oppression & Profiting from Human Rights Abuses in Military-Ruled Burma (Myanmar)*. Available at <http://www.earthrights.org/publications>

<sup>21</sup> 'Chinese Dilemma over Burma Protests.' *BBC News*, 25 September 2007. <http://news.bbc.co.uk/2/hi/asia-pacific/7011746.stm>

<sup>22</sup> 'China backs Dialogue between Myanmar & Aung San Suu Kyi.' *Channel News Asia*, 20 November 2007. [http://www.channelnewsasia.com/stories/afp\\_asiapacific/view/312543/1/.html](http://www.channelnewsasia.com/stories/afp_asiapacific/view/312543/1/.html)

<sup>23</sup> 'Myanmar Keeps the Wheels on with China's Help.' *The Wall Street Journal*, 24 June 2008. [http://online.wsj.com/article/SB121424381094497175.html?mod=googlenews\\_wsj](http://online.wsj.com/article/SB121424381094497175.html?mod=googlenews_wsj)

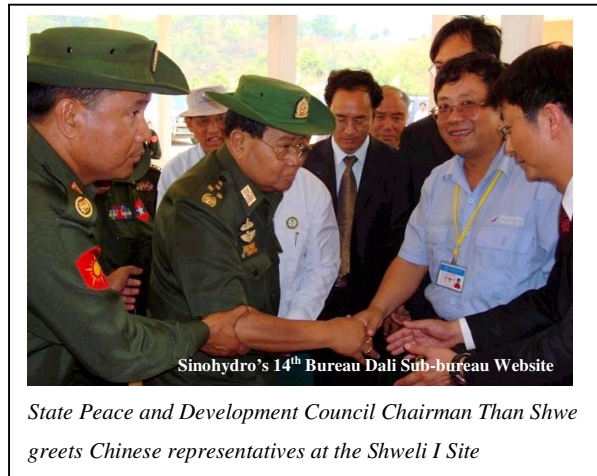


## HYDROPOWER

At least 45 Chinese MNCs have been involved in approximately 63 hydropower projects in Burma, including several related substation and transmission line projects. Of these hydropower projects, the largest is the 7,100 megawatt (MW) Tasang Dam on the Salween River,<sup>24</sup> which is to be integrated into the Asian Development Bank's Greater Mekong Sub-region Power Grid. A groundbreaking ceremony for the Tasang Dam was held in March 2007, and China Gezhouba Group Co. (CGGC) started preliminary construction shortly after.

China's involvement in the damming of the Salween River is not limited to the Tasang project. In 2006, Sinohydro signed a Memorandum of Understanding (MoU) with Burma for the US\$ 1 billion, 1,200 MW Hat Gyi Dam along the Thai border. In April 2007, Farsighted Group, now known as Hanergy Holding Group, and China Gold Water Resources Co. signed MoUs with Burma for an additional 2,400 MW hydropower project on the upper Salween, an area which Yunnan Power Grid Co. reportedly surveyed in 2006. In April 2008, Sinohydro, China Southern Power Grid Co., and China Three Gorges Project Co. signed a strategic cooperation framework agreement for the development of the hydropower potential of the Salween River.<sup>25</sup> Despite China's involvement in these large-scale dams on the Salween, most of the electricity is destined for export to neighboring Thailand.

The 1,420 MW Shweli I, II, III Cascade, in Shan State near the Chinese border, has also received significant Chinese support. Yunnan Machinery & Equipment Import & Export Co. (YMEC) began work on the Shweli I Hydropower Plant in February 2004 and, following Burma's inability to secure funding,<sup>26</sup> joined with Yunnan Huaneng Lancang River Hydropower Development Co. and Yunnan Power Grid Co. to create the Yunnan Joint Power Development Co. (YUPD) in August 2006.<sup>27</sup>



State Peace and Development Council Chairman Than Shwe greets Chinese representatives at the Shweli I Site

<sup>24</sup> For more information regarding the Salween River, see Mon Youth Progressive Organization. 2007. *In the Balance: Salween Dams Threaten Downstream Communities in Burma*; Shan Sapawa. 2006. *Warning Signs: An Update on Plans to Dam the Salween in Burma's Shan State*; Karen Rivers Watch. 2004. *Damming at Gunpoint: Burma Atrocities Pave the Way for Salween Dams in Karen State*; & Salween Watch, Southeast Asia Rivers Network & Center for Social Development Studies at Chulalongkorn University. 2004. *The Salween Under Threat: Damming the Longest Free River in Southeast Asia*. All available at <http://www.salweenwatch.org/publications.html>

<sup>25</sup> '缅甸萨尔温江战略合作框架协议签署 (Salween River Strategic Cooperation Framework Agreement Signed).' *金融界*, 28 April 2008. <http://info.jrj.com.cn/news/2008-04-28/000003585891.html>

<sup>26</sup> '激战瑞丽江——水电十四局瑞丽江电站截流施工纪实 (Shweli River Fierce Battle-Shweli Dam 14<sup>th</sup> Bureau Damming Construction).' *Sinohydro Website*, 26 February 2007. [http://www.sinohydro.com/portlet?pm\\_pl\\_id=7&pm\\_pp\\_id=13&COLUMNID=111111&ARTICLEID=11724607890001](http://www.sinohydro.com/portlet?pm_pl_id=7&pm_pp_id=13&COLUMNID=111111&ARTICLEID=11724607890001) For photographs of construction at the Shweli I Dam site see '瑞丽江项目部图库 (Shweli River Project Bureau Photographs).' *Sinohydro's 14<sup>th</sup> Engineering Bureau Dali Sub-bureau Website*, 29 June 2007. <http://www.fcddl.com/bencandy.php?fid=61&id=394>

<sup>27</sup> '中国在缅甸投资的首个水电项目成功截流 (China's First Hydropower Investment in Burma Successfully Dammed).' *China Electricity Council*, 13 December 2006. <http://www.cec.org.cn/news/showc.asp?id=92488>; For more information regarding the Shweli Cascade see Palaung Youth Network Group. 2007. *Under the Boot*. Available in English and Chinese at <http://www.salweenwatch.org/brn.html>



A few months later, YUPD assumed an 80% share in the project after creating the Shweli River I Power Station Co. together with Burma, turned the Shweli I dam into a Build-Operate-Transfer (BOT) project, and increased the installed capacity from 400 to 600 MW.<sup>28</sup> At least two Sinohydro subsidiaries have provided construction services for the project, and Sichuan Machinery & Equipment Import & Export Co. and Ningbo Huyong Electric Power Material Co. have signed US\$ multimillion contracts for electricity transmission cables and towers.<sup>29</sup> The Shweli I Hydropower Plant is slated for completion by June 2009, and was half complete as of May 2007.

In Kachin State, several Chinese MNCs are involved in the construction of seven large dams along the N'Mai Hka, Mali Hka, and Irrawaddy River, with a combined installed capacity of 13,360 MW.<sup>30</sup> In 2007, China Power Investment Co. signed agreements with Burmese authorities to finance all seven dams, as well as with China Southern Power Grid Co. Yunnan Machinery & Equipment Import & Export Co. (YMEC) signed an MoU with Burma's Ministry of Electric Power in 2006 to develop the hydropower potential of the N'Mai Hka; however details about this arrangement remain unclear. Changjiang Institute of Surveying, Planning, Design & Research has also completed a feasibility study at the confluence of the N'Mai Hka and Mali Hka, and China CAMC Engineering Co. has been involved in the surveying and implementation of hydropower projects in the region.

The 790 MW Yeywa Dam in Mandalay Division, which began construction in 2006, is also being financed and constructed by several Chinese MNCs, including China Gezhouba Group Co., Sinohydro, China International Trust and Investment Co. (CITIC) Technology Co., China National Electric Equipment Co., China National Heavy Machinery Co., and Hunan Savoo Oversea Water and Electric Engineering Co. Additional financial backing for the project is being provided by the China EXIM Bank.

In addition to the Yeywa, Shweli and Hat Gyi projects, Sinohydro – China's largest dam company – and its subsidiaries have been involved in the Kun, Kyauk, Mone, Nam Hkam Hka, Paunglaung, Tarpein I, Thapansaik, and Zawgyi I Dams. As with the Yeywa project, both CITIC and China EXIM Bank provided investment and financial backing for the Thapansaik Dam.

The Yunnan Machinery & Equipment Import & Export Co. (YMEC) has been one of the most active Chinese companies in Burma's hydropower sector. Since the 1990s, YMEC has been involved in more than 25 projects of varying size, including the Ching Hkran, Chinshwehaw, Dattawgyaing, Hopin, Kunhein, Kunlon, Kyaing Ton, Kyaukme, Laiva, Mepan, Nam Hkam Hka, Nam Myaw, Nam Wop, Nancho, Paunglaung, Upper Paunglaung, Shweli I, II, III Cascade, Watwon, Zaungtu, Zawgyi I and II, Zichaung, and N'Mai Hka River hydropower projects, as well as the Rangoon Dagon Substation. The extent of YMEC involvement in these projects, several of which are completed, is unclear, but appears to involve construction and some financing.

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<sup>28</sup> '瑞丽江电站胜利实现截流 (Shweli River Hydropower Station Triumphantly Blocks Water).' *Sinohydro's 14<sup>th</sup> Engineering Bureau Dali Sub-bureau Website*, 11 December 2006.

<http://www.fcddl.com/bencandy.php?fid=3&id=26>

<sup>29</sup> 'Myanmar Installs More Transmission Lines for New Power Plant.' *Xinhua General News Service*, 5 July 2007; 'About Huyong.' *Ningbo Huyong Electric Power Material Co. Website*. <http://www.hydl-cn.com/en/aboutus.htm> [Thanks to Courier Research Associates for providing this link.]; & '缅甸瑞丽江一级电站工程总承包合同在昆签字 (Contracts Signed in Kunming for Shweli I Dam).' *Sinohydro's 14<sup>th</sup> Engineering Bureau Website*, 5 July 2007.

<sup>30</sup> For more information, see Kachin Development Network Group. 2007. *Damming the Irrawaddy*. Available at <http://www.salweenwatch.org/brn.html>

## OIL AND NATURAL GAS

At least 16 Chinese MNCs have been involved in 21 onshore and offshore oil and natural gas projects in Burma, including all three major Chinese oil and natural gas companies Sinopec, China National Petroleum Corporation (CNPC), Sinopec, and China National Offshore Oil Corporation (CNOOC). In August 2007, the Burmese junta confirmed the sale of natural gas from the lucrative Shwe gas fields off the Arakan State coast to PetroChina, at a lower price than other competitors, thus clarifying China's influence in Burma's natural gas sector.<sup>31</sup>



CNPC survey team at onshore L Block, Arakan State

PetroChina and parent CNPC have signed additional MoUs with the Burmese government-owned Myanmar Oil & Gas Enterprise (MOGE) for a total of five offshore natural gas blocks in Arakan State. CNOOC and subsidiaries China National Oil & Gas Development Co. (CNODC) and China Oilfield Services Limited (COSL) have signed MoUs for exploration and production at six Arakan blocks. CNOOC's participation in two of these six blocks comes as part of a Sino-Singaporean consortium created together with China Huanqiu Contracting & Engineering Co. and Golden Aaron Pte. Both Sinopec and PetroChina reportedly conducted exploration off the Arakan coast in 2006 and 2007.<sup>32</sup>

Beyond the Arakan blocks, CNPC has been active to varying degrees in the planning and exploration of several onshore blocks, including Tuyintaung RSF-2, Gwegyo-Ngashandaung RSF-3, Tetma IOR-3, IOR-4, Indaw-Yenan C-1, and Shwebo-Monywa C-2. Sinopec has also conducted exploration at the onshore Block D in Sagaing and Magwe Divisions, while CNOOC and its subsidiaries have been involved, both independently and as part of the Sino-Singaporean Consortium, in the M-2, M-3, M-4 and M-10 offshore blocks in the Gulf of Moattama as well as Indaw-Yenan C-1, and Shwebo-Monywa C-2.

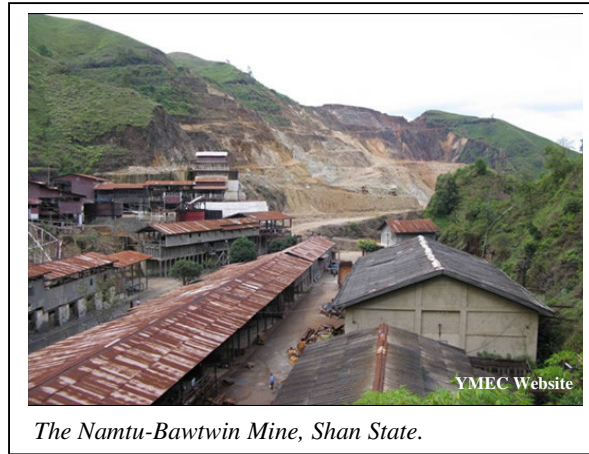
In addition to fossil fuel exploration, CNPC and Sinopec have spearheaded the construction of parallel oil and natural gas pipelines, which would stretch for more than 2,380 km from Burma's Arakan coast to China's southwestern cities of Kunming and/or Chongqing. Sinopec has already signed an over US\$ 1 billion contract for the construction of the oil pipeline, and CNPC has signed an MoU with MOGE for a detailed assessment of the potential construction of a crude oil terminal off the coast of Arakan State. The pipelines and the crude oil terminal would facilitate China's import of oil and natural gas from the Middle East, South America and Africa, as well as increase the efficiency of China's oil and gas imports by providing an alternative to the problematic Straits of Malacca, which are plagued by piracy.

<sup>31</sup> For more information about the Shwe natural gas block, see Shwe Gas Movement. 2006. *Supply & Command: Natural Gas in Western Burma Set to Entrench Military Rule*; & Arakan Oil Watch. *The Shwe Gas Bulletin*. Both available at [www.shwe.org](http://www.shwe.org).

<sup>32</sup> For more information regarding China's oil and natural gas activities in Arakan State contact Arakan Oil Watch, which is currently preparing a report about this issue, at [Arakan\\_OW@yahoo.com](mailto:Arakan_OW@yahoo.com)

## MINING

China's involvement in Burma's mining sector is difficult to assess, as many mining projects are small scale – therefore less visible, attracting less publicity – and they are often located in remote areas where access is restricted by the military or obstructed by difficult terrain. The Kachin Development Networking Group and the Lahu National Development Organization have in recent years published on-the-ground research indicating that the Chinese companies Northern Star, Sea Sun Star, and the Standing Company Limited are involved in numerous small scale mining projects in Kachin and Shan States.<sup>33</sup>



*The Namtu-Bawtwin Mine, Shan State.*

In addition to these projects, ERI has found evidence of involvement of 10 Chinese MNCs in 6 major mining projects over the last five years. The largest, the Tagaung Taung nickel deposit, in Mandalay Division, is majority controlled by China Nonferrous Metal Mining Co. and represents an investment of US\$600 million for 40 million tons of nickel ore. In 2007, China's National Reform and Development Council approved the project, and Burma's Ministry of Mines accepted the completed feasibility study. China EXIM Bank and China Development Bank are providing financial support, and China Nonferrous Engineering & Research Institute is helping design the project together with Canadian-based Hatch. The Tagaung Taung project is touted as "one of the greatest collaborative efforts in the history of Sino-Burmese mining," having received "the highest levels of attention from Burmese and Chinese government leaders."<sup>34</sup>

Kingbao (Jinbao) Mining Co. has also signed agreements with the Ministry of Mining No. 3 to conduct exploration and feasibility studies at the Mwetaung nickel deposit in Chin State that contains proven nickel reserves in excess of 10 million tons. Kingbao (Jinbao) Mining Co. is a joint subsidiary of Gold Mountain (Hong Kong) International Mining Co. and Wanbao Mining Co., both of which control 50% of the company. Gold Mountain (Hong Kong) International Mining Co. is itself a wholly-owned subsidiary of Zijing Mining Co., while Wanbao Mining Co. is a wholly-owned subsidiary of China North Industries (NORINCO).

Other major mining projects on queue for development include the Letpadaung copper deposit, which is the third deposit of the Monywa Copper Project in Monywa, Sagaing Division. Reports from March 2006 announced China Nonferrous Metal Mining Co.'s ownership of the Letpadaung deposit, which could mean the company now owns a stake in the joint venture between Ivanhoe Mines of Canada and the Myanmar Ministry of Mines.<sup>35</sup> The Mount Popa

<sup>33</sup> Kachin Development Networking Group. 2007. *Valley of Darkness: Gold Mining & Militarization in Burma's Hugawng Valley*. Available at <http://www.kachinnews.com/Valleyofdarkness/ValleyofDarkness.pdf>; & Lahu National Development Organization. 2006. *Undercurrents: Monitoring Development on Burma's Mekong, Issue 2*. Available at <http://www.shanland.org/articles/environment/2006/Images/Undercurrents2.pdf>

<sup>34</sup> '中国有色集团积极推进缅甸达贡山镍矿项目 (CNMC Embarks on Tagaung Taung Nickel Mine Project).' *The State-owned Assets Supervision & Administration Commission (SASAC) of the State Council Website*, 16 November 2006. [www.sasac.gov.cn/zyqy/gcjz/200611210070.htm](http://www.sasac.gov.cn/zyqy/gcjz/200611210070.htm)

<sup>35</sup> In February 2007, Ivanhoe Mines reported that due to requirements of its partnership with Rio Tinto in Mongolia, the company transferred all of its assets in Burma to an independent trust. Ivanhoe Mines. 2007. *Fact File: The Monywa Copper Project*. Available at <http://www.ivanhoemines.com/i/pdf/Monywa-Fact-File.pdf>

Pozzolan Mine in Mandalay Division is also on queue; this project involves the Jiangsu Pengfei Group Co. and was announced in 2007. Yunnan Machinery & Equipment Export & Import Co. has signed several agreements with Burma's Ministry of Mines for the Namtu-Bawtwin Mineral Deposit in Shan State, and is also currently in negotiations for additional exploration and exploitation at the site. Last, the Tigyt coal fired power plant and mine in Shan State is being undertaken by China National Heavy Machinery Co., which has also worked on the Kun, Kabaung and Yeywa Hydropower Plants.

All of this activity follows a 2001 MoU between the Burmese mining authorities and the Chinese Ministry of Land Resources regarding the promotion of exploration and investment in Burmese mining and mineral resources.<sup>36</sup>

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<sup>36</sup> 'Myanmar's Coal Production up Sharply in 2005.' *Xinhua News Agency*, 13 January 2006.

## **LIST OF CHINESE MULTINATIONAL CORPORATIONS INVOLVED IN BURMA'S HYDROPOWER, OIL AND NATURAL GAS, AND MINING SECTORS**

### **HYDROPOWER**

Central China Power Grid Co. (CCPGC)  
Central China Power Grid International Economic & Trade Co.  
Changjiang Geotechnical Engineering Co.  
Changjiang Institute of Surveying, Planning & Design Research  
China CAMC (Construction & Agricultural Machinery Import & Export Co) Engineering Co.  
China Datang Group Co.  
China Datang Yantan Hydropower Co.  
China Export-Import (EXIM) Bank  
China Gezhouba Group Co. (CGGC)  
China Gezhouba Group (CGGC) International Co.  
China Gold Water Resources Co.  
China Hydropower Engineering Consulting Group Co. (CHECC)  
CHECC, Kunming Hydroelectric Investigation Design & Research Institute (KHIDI)  
CHECC, Mid-South Design & Research Institute  
China International Trust & Investment Co. (CITIC) Group  
China International Trust & Investment Co. (CITIC) Technology Co.  
China National Electric Equipment Co. (CNEEC)  
China National Heavy Machinery Co. (CHMC)  
China Power Investment Co. (CPI)  
China Shanghai (Group) Co. for Foreign Economic & Technological Co-operation Co.  
China Southern Power Grid Co. (CSG)  
China Three Gorges Project Co. (CTGPC)  
Guangdong New Technology Import Export Zhuhai Co.  
Guangxi Electric Power Industry Investigation Design & Research Institute  
Hanergy Holding Group (formerly China Farsighted Investment Group)  
Hunan Savoo Oversea Water & Electric Engineering Co.  
Jiangxi Water Programming & Design Institute  
Kunming Electric Machinery Co.  
Ningbo Huyong Electric Power Material Co.  
Shenzhen Menglong Import & Export Co.  
Shweli River I Power Station Co.  
Sichuan Machinery & Equipment Import & Export Co. (SMEC)  
Sinohydro International  
Sinohydro's 1<sup>st</sup> Engineering Bureau  
Sinohydro's 14<sup>th</sup> Engineering Bureau  
Sinohydro's 14<sup>th</sup> Engineering Bureau Dali Sub-bureau

State Grid Corporation of China  
State Grid Corporation of China, Beijing Electric Power Construction Research Institute  
Tianjing ALSTOM Hydro Co.  
Yunnan Electric Power Design Institute  
Yunnan Huaneng Lancang River Hydropower Development Co.  
Yunnan Joint Power Development Co. (YUPD)  
Yunnan Machinery & Equipment Import & Export Co. Ltd. (YMEC)  
Yunnan Power Grid Co.  
Zhejiang Orient Holding Group

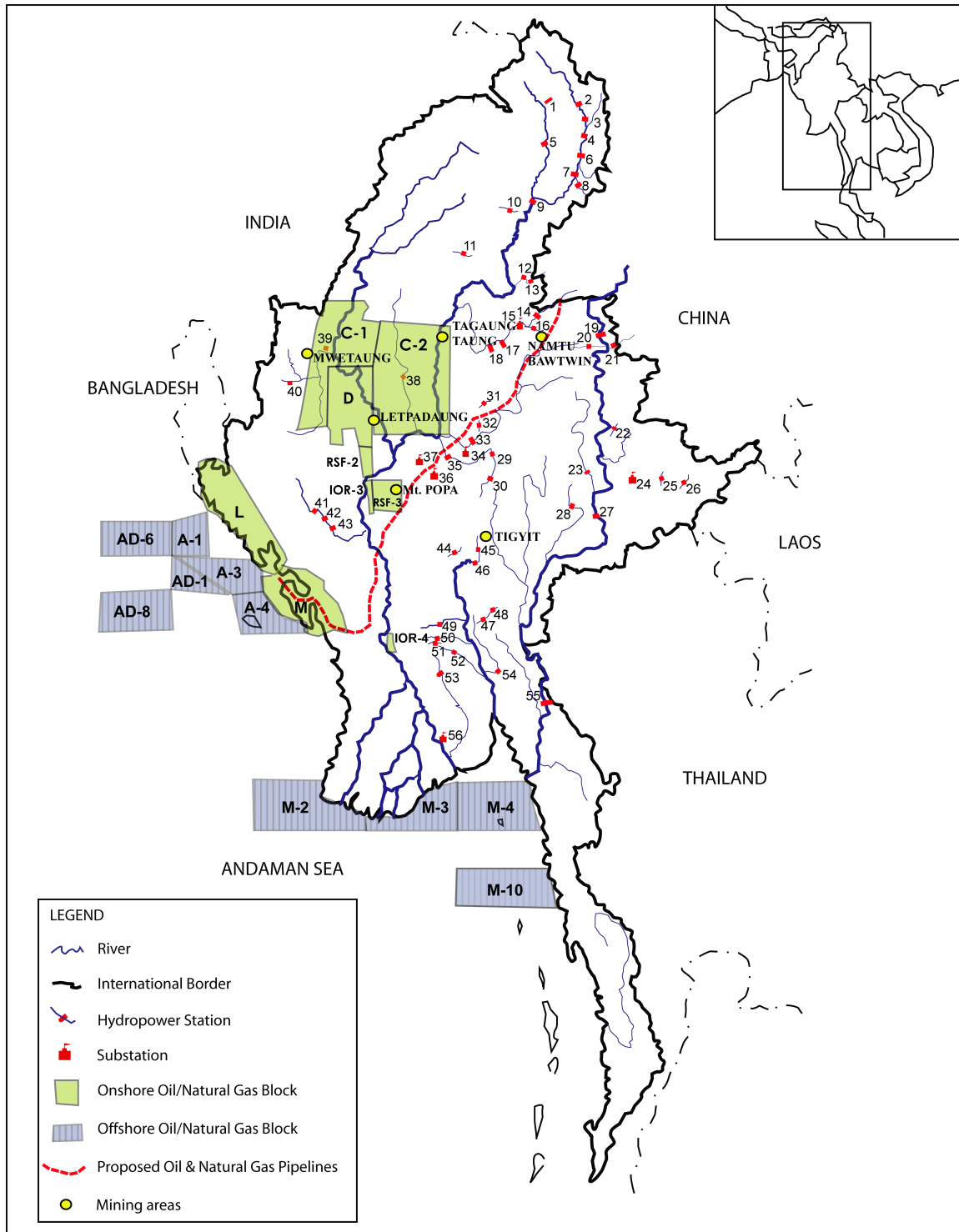
### **OIL AND NATURAL GAS**

China National Offshore Oil Co. (CNOOC)  
China National Offshore Oil Co. (CNOOC) Ltd.  
China National Offshore Oil Co. (CNOOC) Myanmar  
China Oilfield Services Limited (COSL)  
China National Petroleum Co. (CNPC)  
China National Petroleum Co. (CNPC) International  
China National Petroleum Co. (CNPC) Hong Kong  
China National Petroleum Co. (CNPC) Huabei Petroleum  
China National Oil & Gas Exploration & Development Co. (CNODC)  
China National Petroleum Co. (CNPC) Sichuan Petroleum Geophysical Prospecting Co.  
China Huanqiu Contracting & Engineering Co.  
Chinnery Assets  
Kai Er Co.  
PetroChina  
PetroChina International (Singapore) Co. (ChinaOil Singapore)  
China Petroleum & Chemical Co. (Sinopec)

### **MINING**

China Development Bank  
China Export-Import (EXIM) Bank  
China National Heavy Machinery Co. (CHMC)  
China Nonferrous Metal Mining Co. (CNMC)  
CNMC Nickel Co.  
Gold Mountain (Hong Kong) International Mining Co.  
Jiangsu Pengfei Group Co.  
Kingbao (Jinbao) Mining Co.  
Wanbao Mining  
Yunnan Machinery & Equipment Import & Export Co. (YMEC)

# MAP OF COMPLETED, CURRENT AND PLANNED HYDROPOWER, OIL AND NATURAL GAS, AND MINING PROJECTS IN BURMA WITH CHINESE INVOLVEMENT





## HYDROPOWER

1. Nam Hkam Hka Dam (5 MW)
2. Khaunglanphu Dam (1700 MW)
3. Phizaw Dam (1500 MW)
4. Lakin Dam (1400 MW)
5. Laiza Dam (1560 MW)
6. Pashe Dam (1600 MW)
7. Chibwe (Chibwi) Dam (2000 MW)
8. Chibwe Nge (Chibwi Nge) Dam (99 MW)
9. Myitsone Dam (3600 MW)
10. Ching Hkran Dam (2.52 MW)
11. Hopin Dam (1.126 MW)
12. Tarpein I Dam (240 MW)
13. Tarpein II Dam (168 MW)
14. Shweli I Dam (600 MW)
15. Shweli I Substation
16. Nam Myaw Dam (4 MW)
17. Shweli II Dam (460 MW)
18. Shweli III Dam (360 MW)
19. Upper Thanlwin/Kunlong Dam (2400 MW)
20. Kunlon Dam (0.5 MW)
21. Chinshwehaw Dam(0.2 MW)
22. Mepan (Meipan) Dam (1.26 MW)
23. Kunhein (Kunheng) Dam (0.15 MW)
24. Mongsan Substation
25. Kyaing Ton (Kengtung) Dam (0.48 MW)
26. Nam Wop Dam (3 MW)
27. Tasang Dam (7100 MW)
28. Kengtawng Dam (54 MW)
29. Zawgyi I Dam (18 MW)
30. Zawgyi II Dam (12 MW)
31. Kyaukme Dam (4 MW)
32. Watwon Dam (0.5 MW)
33. Yeywa Dam (790 MW)
34. Yeywa Substation
35. Dattawgyaing Dam
36. Belin Substation
37. Shwesaryan Substation
38. Thapaneik Dam (30 MW)
39. Zi Chaung Dam (1.26 MW)
40. Laiva Dam (0.96/0.6 MW)
41. Kyeon Kyeewa Dam (75 MW)
42. Buywa Dam (60 MW)
43. Mone Creek Dam (75 MW)
44. Nancho Dam (40 MW)
45. Upper Paunglaung Dam (140 MW)
46. Paunglaung Dam (280 MW)
47. Thaukyegat I Dam (150 MW)
48. Thaukyegat II Dam (120 MW)
49. Kapaung Dam (30 MW)
50. Phyu Dam (20 MW)
51. Kun (Kunchaung) Dam (60 MW)
52. Yenwe Dam (25 MW)
53. Zaungtu Dam (20 MW)
54. Kyauk Naga Dam (75 MW)
55. Hat Gyi Dam (1200 MW)
56. Rangoon Dagon Substation

## TRANSMISSION LINES

Belin-Meikhtila-Taungtwingyi-Monywa  
Kengtawng  
Myaungdagar-Hlaingthagar-Yekyi  
Rangoon-Yegyi  
Shweli I-Rangoon/Niyou River (China)

## HYDROPOWER LOCATIONS UNKNOWN

Kyauk Dam (Pegu Division)  
'Songpu' Dam\* (7.5 MW)  
'Piaoliang' Dam\* (400 MW)

## ONSHORE OIL AND NATURAL GAS

C-1 Block  
C-2 Block  
D Block  
IOR-3 Block  
IOR-4 Block  
L Block  
M Block  
RSF-2 Block  
RSF-3 Block  
Natural Gas Pipeline  
Oil Pipeline

## OFFSHORE OIL AND NATURAL GAS

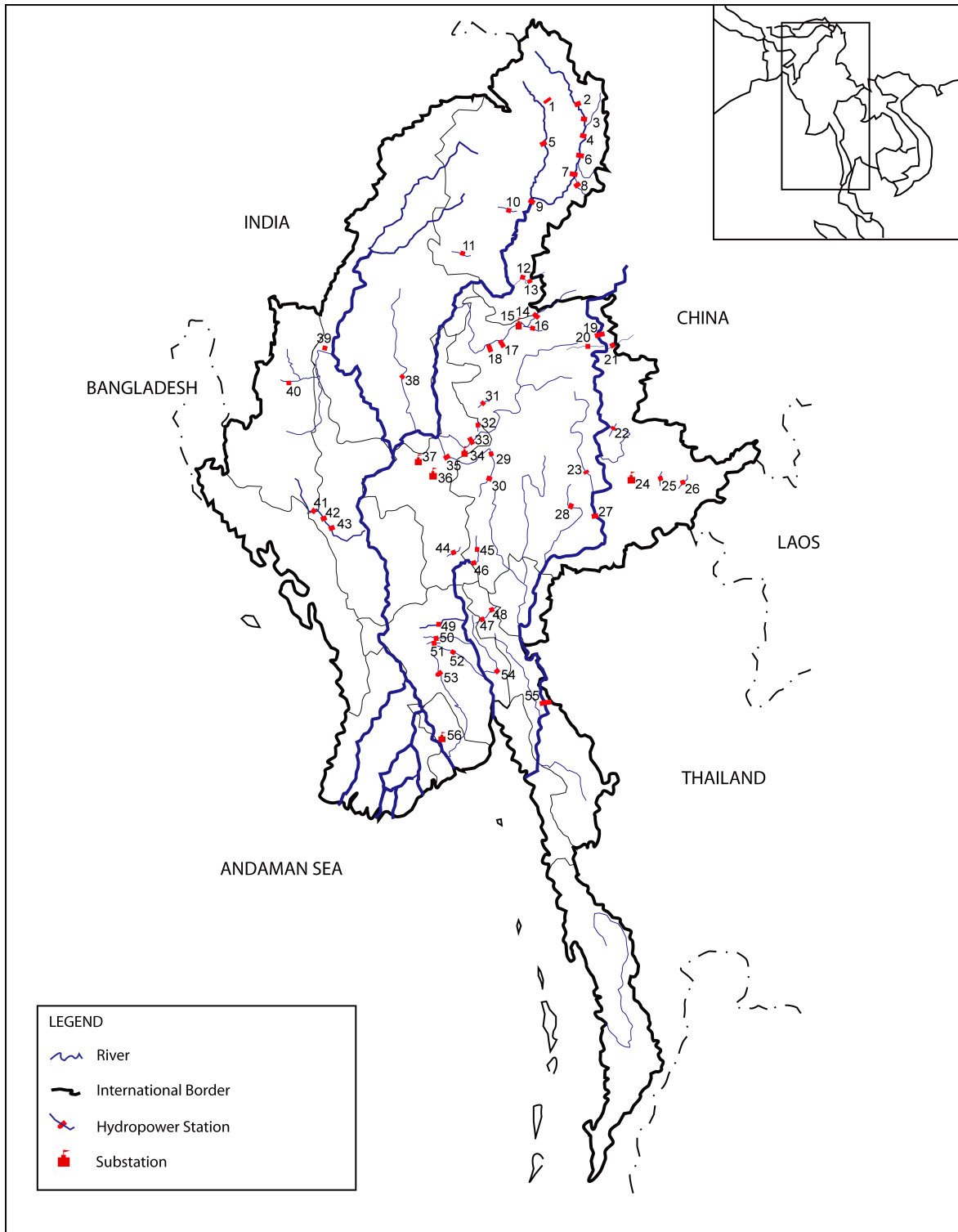
A-1 Block  
A-3 Block  
A-4 Block  
AD-1 Block  
AD-6 Block  
AD-8 Block  
M-2 Block  
M-3 Block  
M-4 Block  
M-10 Block

## MINING

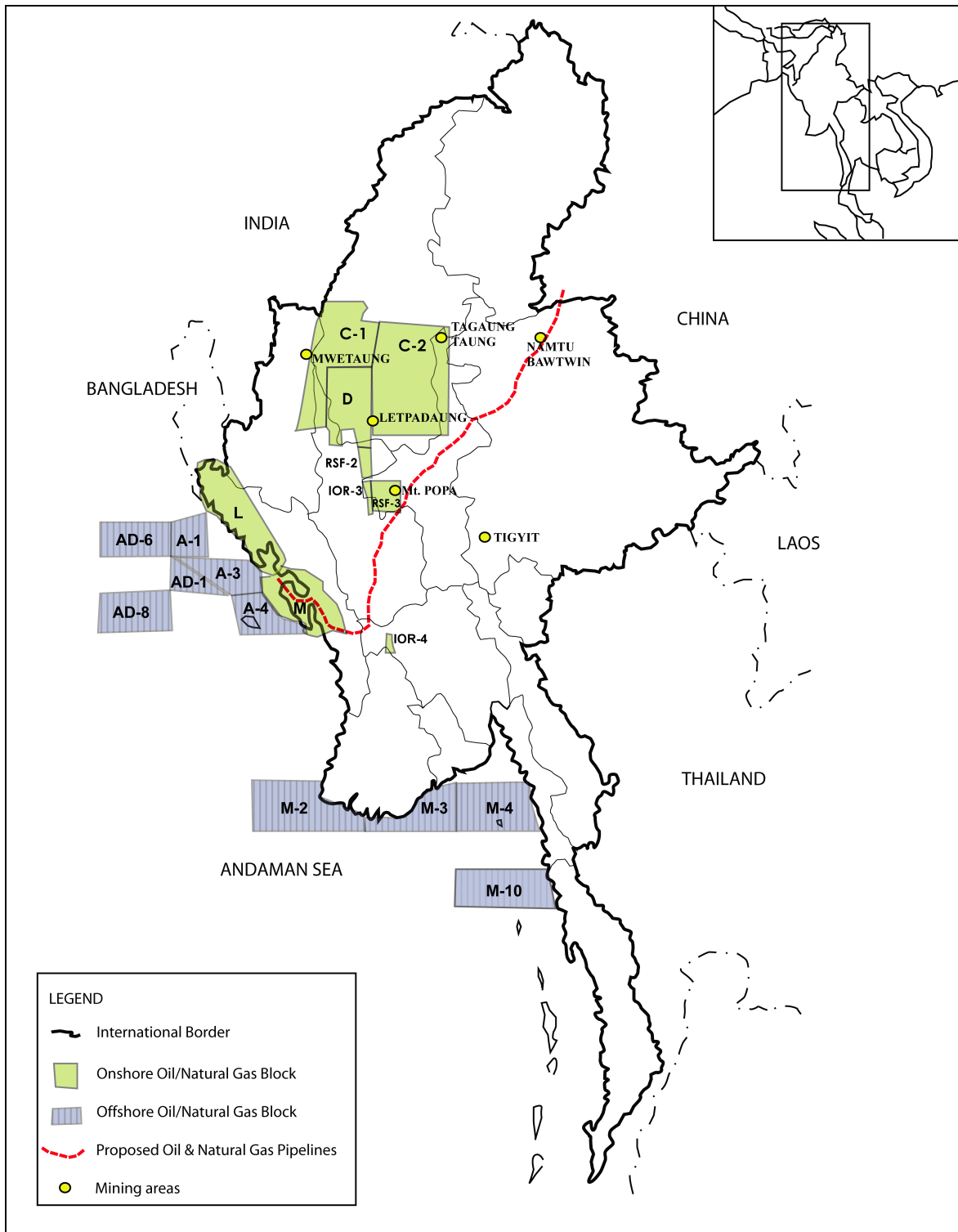
Letpadaung Copper Deposit  
Mount Popa Pozzolan Mine  
Mwetaung Nickel Deposit  
Namtu-Bawtwin Mineral Deposit  
Tagaung Taung Nickel Deposit  
Tigyit Coal Fired Power Plant and Mine

\* Name available in Chinese only

# MAP OF COMPLETED, CURRENT AND PLANNED HYDROPOWER PROJECTS IN BURMA WITH CHINESE INVOLVEMENT



# MAP OF COMPLETED, CURRENT AND PLANNED OIL AND NATURAL GAS, AND MINING PROJECTS IN BURMA WITH CHINESE INVOLVEMENT



## SUMMARY OF COMPLETED, CURRENT AND PLANNED HYDROPOWER, OIL AND NATURAL GAS, AND MINING PROJECTS IN BURMA WITH CHINESE INVOLVEMENT

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Hopin (1.26 MW), (Monyin Township) .....	20
Khaunglanphu (1700 MW), N'Mai Hka (Khaunglanphu Township).....	20
Laiza (1560 MW), N'Mai Hka (Sumprabum Township) .....	20
Lakin (1400 MW), N'Mai Hka (Chibwe Township).....	20
Myitsone (3600 MW), Irrawaddy Confluence.....	20
Nam Hkam Hka (5 MW), (Potao Township).....	21
Pashe (1600 MW), N'Mai Hka (Chibwe Township).....	21
Phizaw (1500 MW), N'Mai Hka (Khaunglanphu Township) .....	21
Tarpein I (240 MW), Tarpein River (Dawphoneyan Township).....	21
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Thaukyegat (150 MW), Thaukyayka (Day Loh) River .....	27
Yenwe (25 MW), Yenwe Creek (Kyaukdagah Township).....	27
Zaungtu (20 MW), Upper Bago River (Taikyvi Village, Bago Township).....	28
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Kunlon (0.5 MW) .....	29
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Kyaukme (4 MW).....	29
Mepan (Meipan) (1.26 MW) (Mong Hsat Township) .....	29
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Shweli II (460 MW), Shweli River.....	30
Shweli III (360 MW), Shweli River .....	30
Tasang (7100 MW), Salween River .....	31
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Mount Popa Pozzolan Mine & Factory .....	44

## **HYDROPOWER**

### **CHIN STATE**

#### **Laiva (0.6 MW) (Falam Township)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) undertook this project in 1992.<sup>1</sup>

### **KACHIN STATE**

#### **In the Region of the N'Mai Hka, Mali Hka & Irrawaddy**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) signed an MoU with the Ministry of Electric Power in 2006 to develop the hydropower potential of the N'Mai Hka, however.<sup>2</sup>

China CAMC (Construction & Agricultural Machinery Import & Export Corporation) Engineering Co. met with Burmese representatives in Guilin, Guangxi in November 2006 to discuss the surveying and implementation of hydropower projects at the confluence of these rivers.<sup>3</sup>

China Southern Power Grid Co. (CSG) and China Power Investment Co. (CPI) signed a cooperation agreement in May 2007 to jointly develop the hydropower potential of the N'Mai Hka, Mali Hka and Irrawaddy River.<sup>4</sup>

China Datang Yantan Hydropower Development Co. and Shenzhen Menglong Import & Export Co. signed agreements for the major repairs of a 60 MW dam in northern Kachin State in October 2007.<sup>5</sup>

#### **Chibwe (Chibwi) (2000 MW), N'Mai Hka (Chibwe Township)**

China Power Investment Co. (CPI) signed an MoU for the construction of this dam in May 2007.<sup>6</sup>

#### **Chibwe Nge (Chibwi Nge) (99 MW), Chibwe Creek (Chibwe Township)**

China Power Investment Group Co. (CPI) and Burma's Ministry of Electric Power No. 1 signed a contract in February 2008 for the construction and supply of power generating equipment for this hydropower plant, which will provide energy for the construction of the Myitsone and other dams on the N'Mai Hka, Mali Hka and Irrawaddy River.<sup>7</sup> The feasibility study, conducted by Chinese and Burmese teams, is expected to be complete by the end of 2008.<sup>8</sup>

Changjiang Institute of Surveying, Planning & Design Research and subsidiary Changjiang Geotechnical Engineering Co. undertook surveying and examination services in early 2008.<sup>9</sup>

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<sup>1</sup> 'Overseas & Domestic Projects.' *YMEC Website*. [http://www.ymec.com.cn/cn/about\\_yj.htm](http://www.ymec.com.cn/cn/about_yj.htm)

<sup>2</sup> '中缅能源合作潜力巨大 (Sino-Burmese Energy Cooperation has Tremendous Potential).' *中国农村水电及电气化信息网*, 30 March 2006. <http://www.shp.com.cn/show.asp?id=18290>; & '南方电网中电投将合作支持缅甸水电资源开发 (CSG Investment Supports Development of Burma's Hydropower Resources).' *中国水利水电设备(产品)网*, 28 May 2007. <http://www.cnhydro.com/info/techdevelop/showContent.asp?id=4036>

<sup>3</sup> 'Prime Minister General Soe Win & Party Visit Guilin.' *The New Light of Myanmar*, 6 November 2006. <http://mission.itu.ch/MISSIONS/Myanmar/06nlm/n061106.htm>

<sup>4</sup> '中电投：外围突破 迂回入滇 (China Electric Investment: Foreign Breakthroughs Enter Yunnan).' *LRN 资源网*, 17 January 2008. [http://www.lrn.cn/invest/enterpriseinfo/enterpriseneews/200801/t20080117\\_189918.htm](http://www.lrn.cn/invest/enterpriseinfo/enterpriseneews/200801/t20080117_189918.htm)

<sup>5</sup> '岩滩发电公司首次敲开水电检修国际市场 (Datang Yantan's First Strike into the International Hydropower Market).' *Datang Yantan Website*, 25 May 2007. <http://www.china-cdt.com/news/datangnews/726473.html>

<sup>6</sup> 'Burma Committed to Building more Hydropower Plants.' *BBC Financial Times Information*, 7 May 2007.

<sup>7</sup> Ibid.

<sup>8</sup> 'Kachin Hydropower Study due in December.' *The Myanmar Times*, 24 March 2008. <http://www.mmtimes.com/no411/b002.htm>

<sup>9</sup> '岩土地质公司领导慰问缅甸地质人员 (Geotechnical Engineering Co. Consoles Burma Geotechnical Staff).' *Changjiang Institute of Surveying, Planning & Design Research Website*, 21 March 2008. <http://www.cjwsjy.com.cn/News/Company/200803215182.htm>



China Gezhouba Group Co. (CGGC) signed agreements with China Power Investment Group Co. (CPI) in 2008 for the construction of earth and metal structures as well as the installation of power generating equipment over a period of 32 months.<sup>10</sup>

**Ching Hkran (Chying Hkran) (2.52 MW) (Ching Hkran Village, Myitkyina Township)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) undertook this project in 1991.<sup>11</sup> On 11 July 2006 this dam was destroyed following heavy rain storms.<sup>12</sup>

**Hopin (1.26 MW), (Monyin Township)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) undertook this project in 1990.<sup>13</sup>

**Khaunglanphu (1700 MW), N'Mai Hka (Khaunglanphu Township)**

China Power Investment Co. (CPI) signed an MoU with the Ministry of Electric Power in May 2007.<sup>14</sup>

**Laiza (1560 MW), N'Mai Hka (Sumprabum Township)**

China Power Investment Co. (CPI) signed an MoU with the Ministry of Electric Power in May 2007.<sup>15</sup>

**Lakin (1400 MW), N'Mai Hka (Chibwe Township)**

China Power Investment Co. (CPI) signed an MoU with the Ministry of Electric Power in May 2007.<sup>16</sup>

**Myitsone (3600 MW), Irrawaddy Confluence**

China Power Investment Co. (CPI) signed an MoU with the Ministry of Electric Power 1 in December 2006.<sup>17</sup> In January 2007, Burma's Ministry of Electric Power No. 1 held a meeting with CPI and China's National Development & Reform Council to discuss investment issues for the Myitsone Dam.<sup>18</sup> In April 2007, both CPI and the Chinese Embassy to Burma announced that dam construction on the Irrawaddy Confluence had begun ahead of schedule.<sup>19</sup>

Changjiang Institute of Surveying, Planning, Design & Research has completed a 5 month feasibility study at the Myitsone site.<sup>20</sup>

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<sup>10</sup> '缅甸密松和其培水电站施工电源电站 (Burma Myitsone and Chibwe Hydropower Plant Construction).' *CGGC Website*, 25 July 2008. [http://www.cggc.cn/info\\_show.asp?type=&UidA=1071&UidB=1078&id=3687](http://www.cggc.cn/info_show.asp?type=&UidA=1071&UidB=1078&id=3687)

<sup>11</sup> 'Overseas & Domestic Projects.' *YMEC Website*. [http://www.ymec.com.cn/cn/about\\_yj.htm](http://www.ymec.com.cn/cn/about_yj.htm); & 'Chimranrkha Hydropower Station (Myanmar).' *YMEC Website*. [http://www.ymec.com.cn/en/hpp/Project\\_jcc.htm](http://www.ymec.com.cn/en/hpp/Project_jcc.htm)

<sup>12</sup> 'Dam Burst Kills Five in Northern Burma's Kachin State.' *Democratic Voice of Burma*, 11 July 2006. <http://six.pairlist.net/pipermail/burmanet/20060712/000989.html> [Thanks to Courier Research Associates for providing this link.]

<sup>13</sup> 'Overseas & Domestic Projects.' *YMEC Website*. [http://www.ymec.com.cn/cn/about\\_yj.htm](http://www.ymec.com.cn/cn/about_yj.htm)

<sup>14</sup> 'Burma Committed to Building more Hydropower Plants.' *BBC Financial Times Information*, 7 May 2007.

<sup>15</sup> *Ibid.*

<sup>16</sup> *Ibid.*

<sup>17</sup> '集团公司与缅甸第一电力部签署开发缅甸水电项目谅解备忘录 (CPI & Burma Ministry of Electric Power No. 1 Sign MoU to Develop Burma's Hydropower).' *CPI Website*, 29 December 2006. <http://www.cpicorp.com.cn/news.do?cmd=show&id=71604>

<sup>18</sup> '国家法改委副主任张国宝会见缅甸联邦第一电力部长 (CPI, China NDRC & Burma Ministry of Electric Power 1 Meet).' *CPI Website*, 22 January 2007. <http://www.cpicorp.com.cn/news.do?cmd=show&id=71688>

<sup>19</sup> '缅甸恩迈开讲, 迈立开江及伊洛瓦底江流域水电开发施工电源电站前期工程开工 (N'Mai Hka, Mali Hka & Irrawaddy River Project Begins Principal Construction).' *CPI Website*, 3 May 2007.

<http://www.cpicorp.com.cn/news.do?cmd=show&id=73584>; & '缅甸“三江”流域开发施工电源站前期工程开工 ('Three Rivers' Confluence Hydropower Plant Begins Principal Construction).' *The Economic & Commercial Counselor's Office of the Embassy of the People's Republic of China in Myanmar Website*, 11 May 2007. <http://mm.mofcom.gov.cn/aarticle/jmxw/200705/20070504656153.html>

<sup>20</sup> The original link to this news report is no longer functional; however, a description of its content is included in 'Junta Ignore Pleas to Stop Myitsone Hydropower Project.' *Kachin News Group* via *Salween Watch Website*, 14 June 2007. <http://salween-watch2.livejournal.com/tag/myitsone+kachin+dams>

### **Nam Hkam Hka (5 MW), (Potao Township)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) undertook this project in 1992.<sup>21</sup>

Sinohydro's 14<sup>th</sup> Engineering Bureau lists this as an international project which it has undertaken, presumably by providing construction services.<sup>22</sup>

### **Pashe (1600 MW), N'Mai Hka (Chibwe Township)**

China Power Investment Co. (CPI) signed an MoU with the Ministry of Electric Power in May 2007.<sup>23</sup>

### **Phizaw (1500 MW), N'Mai Hka (Khaunglanphu Township)**

China Power Investment Co. (CPI) signed an MoU with the Ministry of Electric Power in May 2007.<sup>24</sup>

### **Tarpein I (240 MW), Tarpein River (Dawphoneyan Township)**

Central China Power Grid Co. signed an agreement for cooperation in September 2006.<sup>25</sup>

Sinohydro's 14<sup>th</sup> Engineering Bureau and the Dali Sub-bureau of Sinohydro's 14<sup>th</sup> Engineering Bureau were present during the December 2007 opening ceremony.<sup>26</sup> The dam is expected to come online by September 2008, with construction completed by June 2010.<sup>27</sup> Sinohydro reports state that financial investment for this project has been provided by China Datang Group Co., Central China Power Grid International Economic & Trade Co., and Jiangxi Water Programming & Design Institute.<sup>28</sup>

China Datang Group Co. acquired a controlling stake in March 2008 with an investment of CNY 1.6 billion for the Tarpein I Dam.<sup>29</sup>

### **Tarpein II (168 MW), Tarpein River (Dawphoneyan Township)**

Central China Power Grid Co. discussed construction for this project with the Ministries of Electric Power No.1 and No.2 after a 2006 meeting on the progress of the Tarpein I project 9 km upstream.<sup>30</sup>

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<sup>21</sup> 'Overseas & Domestic Projects.' *YMEC Website*. [http://www.ymec.com.cn/cn/about\\_yj.htm](http://www.ymec.com.cn/cn/about_yj.htm)

<sup>22</sup> 'Domestic & Overseas Projects.' *Sinohydro 14<sup>th</sup> Engineering Bureau Website*.  
<http://www.fcbmis.com/English/Overseas%20Projects.htm>

<sup>23</sup> 'Burma Committed to Building more Hydropower Plants.' *BBC Financial Times Information*, 7 May 2007.

<sup>24</sup> *Ibid.*

<sup>25</sup> '缅甸总理考察华中电网 鄂缅有望扩大电力开发合作 (Burma Premier Reviews CCPG, Hubei & Burma Hope to Expand Electricity Development Cooperation).' *湖北日报*, 4 November 2006.

<http://www.cnhubei.com/200611/ca1198075.htm> [Thanks for Courier Research Associates for providing this link.]

<sup>26</sup> '缅甸太平江水电站主体工程开工 (Burma Tarpein Hydropower Plant Principal Work Begins).' *Sinohydro's 14<sup>th</sup> Engineering Bureau Dali Sub-bureau Website*, 31 December 2007.

<http://www.fcbdl.com/bencandy.php?fid=37&id=737> For extensive photographs of construction at the Tarpein Dam see '太平江电站项目部图库(Tarpein River Power Plant Project Bureau Photographs).' *Sinohydro's 14<sup>th</sup> Engineering Bureau Dali Sub-bureau Website*, 20 December 2007.

<http://www.fcbdl.com/bencandy.php?fid=61&id=683>

<sup>27</sup> *Ibid.*

<sup>28</sup> *Ibid.*

<sup>29</sup> 'Datang to Take Controlling Stake in Myanmar Hydropower Plant.' *Morning Star-Dow Jones*, 4 March 2008.

[http://news.morningstar.com/newsnet/ViewNews.aspx?article=/DJ/200803040541DOWJONESDJONLINE000209\\_univ.xml](http://news.morningstar.com/newsnet/ViewNews.aspx?article=/DJ/200803040541DOWJONESDJONLINE000209_univ.xml) [Thanks to Courier Research Associates for providing this link. Note: this article does not explicitly name the Tarpein I Dam, however see Courier Research Associates. ELECTRIC INDUSTRY OF BURMA/MYANMAR ON-LINE COMPENDIUM for reference. Available at <http://burmalibrary.org/docs2/myanmar-elec.pdf> ]

<sup>30</sup> '华中电网公司经贸代表团赴缅甸进行工作访问 (CCPGC Team Visits Burma).' *CCPGC Website*, 7 December 2006. [http://202.110.186.75:8080/pub/huazhong/gjjldt/t20061207\\_10006.htm](http://202.110.186.75:8080/pub/huazhong/gjjldt/t20061207_10006.htm)

## **KAREN STATE**

### **Hat Gyi (1200 MW), Salween River**

Sinohydro signed a US\$ 1 billion MoU in conjunction with Thai EGAT and Burma for this project in June 2006.<sup>31</sup> Originally Sinohydro had a 40% stake in the project, while EGAT had at least 50%, leaving Burma with the remainder, however official Sinohydro reports from March 2008 state that Sinohydro became the controlling stakeholder following a meeting with EGAT's president.<sup>32</sup>

### **Thaukyegat I (150 MW), Thaukyayka (Day Loh) River, (Tantabin Township, Pegu Division)**

Changjiang Institute of Surveying, Planning & Design Research list this dam on its website as an international hydropower project that was undertaken together with Asia World Co.<sup>33</sup>

### **Thaukyegat II (120 MW), Thaukyayka (Day Loh) River**

The Dali Sub-bureau of Sinohydro's 14 Engineering Bureau signed an agreement with Asia World Co. to provide construction services for a diversion tunnel between May 2008 and February 2009.<sup>34</sup>

## **MAGWAY DIVISION**

### **Buywa (60 MW), Mone Creek (Bu Village, Sidoktaya Township)**

Guangdong New Technology Import Export Zhuhai Co. signed a letter of intent with the Ministry of Agriculture and Irrigation in 2004 for this US\$ 20 million project 13 miles upstream from the Mone Creek dam.<sup>35</sup>

### **Kyeeon Kyeewa (75 MW), Mone Creek (Pwintbyu Township)**

Guangdong New Technology Import Export Zhuhai Co. signed a EU€ 13 million agreement with the Ministry of Electric Power in 2006 for the construction of the Kyeeon Kyeewa Hydropower Project.<sup>36</sup> This project was inspired by the feasibility study conducted for the Mone Creek Hydropower Plant.<sup>37</sup>

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<sup>31</sup> '怒江--萨尔温江哈吉水电站合作开发备忘录签字仪式在京举行 (MoU Signing Ceremony for the Nu-Salween River Hatgyi Hydropower Project).' *承包劳务频道: 中国对外承包工程商会*, 27 June 2006.

<http://chinca.mofcom.gov.cn/aarticle/tpxw/200606/20060602530559.html>

<sup>32</sup> 'EGAT Signs Deal with Sinohydro to Develop 600 MW Hydro Project in Myanmar.' *Global Power Report*, 20 July 2006; & '泰国产电机构总裁访问中国水电集团 (President of Thai EGAT Visits Sinohydro).' *Sinohydro Website*, 11 March 2008.

[http://www.sinohydro.com/portlet?pm\\_pl\\_id=7&pm\\_pp\\_id=13&COLUMNID=111111&ARTICLEID=12052265380001](http://www.sinohydro.com/portlet?pm_pl_id=7&pm_pp_id=13&COLUMNID=111111&ARTICLEID=12052265380001)

<sup>33</sup> '立足长江 走向世界—枢纽处坝工一室发展纪实 (Building from the Changjiang, Moving Toward the Global Dam Sector).' *Changjiang Institute of Surveying, Planning & Design Research Website*, 30 January 2008.

<http://www.cjwsjy.com.cn/News/Company/200801304996.htm>

<sup>34</sup> '缅甸 Thaukyegat(2)水电站导流隧洞工程施工 (Thaukyegat II Hydropower Plant Diversion Tunnel Project Construction).' *Dali Sub-Bureau of Sinohydro's 14<sup>th</sup> Engineering Bureau Website*, 28 April 2008.

<http://www.fcddl.com/bencandy.php?fid=29&id=932>

<sup>35</sup> Maung Aung Myoe. 2007. 'Sino-Myanmar Economic Relations Since 1988.' *Working Paper Series No. 86, Asia Research Institute, National University of Singapore*. <http://www.burmalibrary.org/docs2/MmEcoRelations.pdf>; & 'Information Sheet: No. D-3570(1).' *Myanmar Information Committee, Yangon*, 20 January 2005.

<http://www.myanmar-information.net/infosheet/2006/060130.htm>

<sup>36</sup> '缅甸 Kyeeon Kyeewa 水电站项目签约 (Agreement Signed for Burma Kyeeon Kyeewa Hydropower Plant Project).' *Ministry of Commerce of the People's Republic of China Department of Asian Affairs Website*, 28 December 2006.

<http://big5.mofcom.gov.cn/gate/big5/yzs.mofcom.gov.cn/aarticle/zcfb/200612/20061204166259.html>

<sup>37</sup> Platts. 2007. *Platts Myanmar Country Energy Profile*. [Thanks to Courier Research Associates for providing this document.]

### **Mone Creek (75 MW), Mone Creek (Sidoktaya Township)**

China International Trust & Investment Co. (CITIC) Technology Co. undertook this project together with US\$ 32 million supplied by China EXIM Bank.<sup>38</sup> The main dam at the Mone Creek Hydropower Plant, operational since December 2004, is 61 m high and 1,317 m long with a holding capacity sufficient to irrigate 108,000 acres of land.<sup>39</sup>

Sinohydro's 1<sup>st</sup> Engineering Bureau assisted with the installation of power generators for RMB 34 million, and in November 2000 Sinohydro signed maintenance contracts for this hydropower plant.<sup>40</sup> In November 2004 the first turbine generator passed a 72 hour operation test, and the dam was expected to enter commercial production by November 2005.<sup>41</sup>

## **MANDALAY DIVISION**

### **Dattawgyaing (Kyaukse Township)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) discussed this project with Burmese representatives at a November 2006 meeting in Guilin, Guangxi.<sup>42</sup> In November 2007, YMEC signed a contract with the Ministry of Electric Power No.1 to supply equipment for this project.<sup>43</sup>

### **Nancho (40 MW), Nancho Creek (Pynmanah Township)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) discussed this project with Burmese representatives at a November 2006 meeting in Guilin, Guangxi.<sup>44</sup> In April 2008, YMEC and Kunming Electric Machinery Co. (KEM) signed an agreement to supply two 20 MW hydroturbine generators and additional related machinery for this project.<sup>45</sup>

### **Paunglaung (280 MW) (Pynmana Township)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) signed a contract for this project in 1998.<sup>46</sup> YMEC's description of the 131 m high, 945 m long Paunglaung project states that the US\$ 170 million was provided by the Chinese government on a seller's credit basis, and construction services were provided by CHECC Kunming Hydroelectric Investigation Design & Research Institute and Sinohydro's 14<sup>th</sup> Engineering Bureau.<sup>47</sup>

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<sup>38</sup> 'China-Contracted Myanmar Hydropower Plant Put into Service.' *Xinhua News Agency*, 18 June 2006.

<sup>39</sup> 'Government to Generate 2,000 more Megawatts during 5 Year Plan Thanks to Mone Creek Multipurpose Dam, Dry Pwintbyu Plain can Now Increase Irrigated Areas.' *The New Light of Myanmar*, 30 December 2004. <http://burmalibrary.org/docs2/NLM2004-12-30.pdf> [Thanks to Courier Research Associates for providing this link.]

<sup>40</sup> '缅甸德畔赛及孟水电站 (Burma's Thapansaik & Mone River Hydropower Plants).' *Sinohydro Website*. [http://www.sinohydro.com/portlet?pm\\_pl\\_id=7&pm\\_pp\\_id=29&COLUMNID=11509592350001](http://www.sinohydro.com/portlet?pm_pl_id=7&pm_pp_id=29&COLUMNID=11509592350001)

<sup>41</sup> '缅甸孟河电站首台机组投入运行 (First Generator at Burma's Mone Hydropower Plant Operational).' *Sinohydro Website*, 27 December 2004.

[http://www.sinohydro.com/portlet?pm\\_pl\\_id=7&pm\\_pp\\_id=13&COLUMNID=111111&ARTICLEID=11474944380001](http://www.sinohydro.com/portlet?pm_pl_id=7&pm_pp_id=13&COLUMNID=111111&ARTICLEID=11474944380001)

<sup>42</sup> 'Prime Minister General Soe Win & Party Visit Guilin.' *The New Light of Myanmar*, 6 November 2006. <http://mission.itu.ch/MISSIONS/Myanmar/06nlm/n061106.htm>

<sup>43</sup> 'Minister for Electric Power No 1 Receives President of YMEC.' *The New Light of Myanmar*, 30 November 2007. <http://mission.itu.ch/MISSIONS/Myanmar/07nlm/n071130.htm> [Thanks to Courier Research Associates for providing this link.]

<sup>44</sup> 'Prime Minister General Soe Win & Party Visit Guilin.' *The New Light of Myanmar*, 6 November 2006. <http://mission.itu.ch/MISSIONS/Myanmar/06nlm/n061106.htm>

<sup>45</sup> '缅甸南雀水电站主机设备制造合同正式签订 (Burma Nancho Hydropower Plant Primary Equipment Agreement Signed)' *YMEC Website*. [http://www.ymec.com.cn/cn/news/news\\_19.htm](http://www.ymec.com.cn/cn/news/news_19.htm)

<sup>46</sup> 'Overseas & Domestic Projects.' *YMEC Website*. [http://www.ymec.com.cn/cn/about\\_yj.htm](http://www.ymec.com.cn/cn/about_yj.htm); & '我国在东南亚承建的最大水电站将开始全面发电 (China's Largest Dam in Southeast Asia Begins Producing Electricity).' *Sinohydro Website*, 24 February 2005.

[http://www.sinohydro.com/portlet?pm\\_pl\\_id=7&pm\\_pp\\_id=13&COLUMNID=111111&ARTICLEID=11471537120007](http://www.sinohydro.com/portlet?pm_pl_id=7&pm_pp_id=13&COLUMNID=111111&ARTICLEID=11471537120007)

<sup>47</sup> 'Brief Introduction of Paunglaung HPP.' *YMEC Website*. [http://www.ymec.com.cn/en/hpp/project\\_pl.htm](http://www.ymec.com.cn/en/hpp/project_pl.htm); & Platts. 2007. *Platts Myanmar Country Energy Profile*. [Thanks to Courier Research Associates for providing this document.]

Ningbo Huyong Electric Power Material Co. built 230 kV steel power transmission towers for the Paunglaung project under an agreement with Burma's State Power Industry Ministry.<sup>48</sup>

Sinohydro's 14<sup>th</sup> Engineering Bureau secured bids in 2002 and 2004 for the installation of power generating equipment and machinery for the hydropower plant, and by late 2004, three of the four 70 MW generators were online.<sup>49</sup> This Chinese financed and built project is currently functional.<sup>50</sup>

### **Upper Paunglaung (140 MW)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) signed an US\$ 80 million agreement with Burma to supply two 70 MW turbines and additional machinery for this project located 24 km upstream from the Paunglaung Dam.<sup>51</sup>

### **Watwon (0.5 MW) (Pyin Oo Lwin Township)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) signed a contract with the Ministry of Electric Power No. 1 in November 2007 to supply equipment for the repair of this project.<sup>52</sup> This hydropower plant has two 0.25 MW turbines that were installed in the 1930s.<sup>53</sup>

### **Yeywa (790 MW), Myitnge River (Kyaukse Township)**

A consortium created by China International Trust & Investment Co. (CITIC) Technology Co. and Sinohydro International signed engineering, procurement and construction contracts with the Ministry of Electric Power in 2004 for a total value of US\$ 126 million.<sup>54</sup> These contracts included a supply of four 197.5 MW hydro-turbine generators, transformers, and other mechanical equipment, and China EXIM Bank offered to provide financial credit.<sup>55</sup> In November 2006, CITIC Technology Co. met with Burmese Prime Minister Soe Win to discuss the hydraulic steel structure.<sup>56</sup>

China Gezhouba Group Co. (CGGC) signed a US\$ 46,320,000 agreement in 2006 to undertake major construction efforts for this dam over a period of 46 months.<sup>57</sup> Construction phases I, II, V, VII and

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<sup>48</sup> 'About Huyong.' *Ningbo Huyong Electric Power Material Co. Website*. <http://www.hydl-cn.com/en/aboutus.htm> [Thanks to Courier Research Associates for providing this link.]

<sup>49</sup> '经受住考察无愧于祖国 (Put to the Test, the Paunglaung Hydropower Plant Shines for the Motherland).' *Sinohydro 14<sup>th</sup> Engineering Bureau Website*, 20 May 2005. [http://www.fcbmis.com/sd\\_nm/2005/5-20/164412.html](http://www.fcbmis.com/sd_nm/2005/5-20/164412.html)

<sup>50</sup> '缅甸最大水电站首台机组成功运行发电 (First Generator at Burma's Largest Hydropower Plant Successfully Becomes Operational).' *Sinohydro Website*, 4 August 2004. [http://www.sinohydro.com/portlet?pm\\_pl\\_id=7&pm\\_pp\\_id=13&COLUMNID=111111&ARTICLEID=11471537000061;](http://www.sinohydro.com/portlet?pm_pl_id=7&pm_pp_id=13&COLUMNID=111111&ARTICLEID=11471537000061;) & '我国在东南亚承建的最大水电站将开始全面发电 (China's Largest Dam in Southeast Asia Begins Producing Electricity).' *Sinohydro Website*, 24 February 2005. [http://www.sinohydro.com/portlet?pm\\_pl\\_id=7&pm\\_pp\\_id=13&COLUMNID=111111&ARTICLEID=11471537120007](http://www.sinohydro.com/portlet?pm_pl_id=7&pm_pp_id=13&COLUMNID=111111&ARTICLEID=11471537120007)

<sup>51</sup> 'Myanmar Signs US\$ 80 Million Hydropower Deal with China's Yunnan Machinery.' *Xinhua Financial*, 5 September 2005.

<sup>52</sup> 'Minister for Electric Power No 1 Receives President of YMEC.' *The New Light of Myanmar*, 30 November 2007. <http://mission.itu.ch/MISSIONS/Myanmar/07n1m/n071130.htm> [Thanks to Courier Research Associates for providing this link.]

<sup>53</sup> 'General Maung Aye Inspects Construction of Nanmyint Tower in National Kandawgyi Gardens in PyinOoLwin.' *The New Light of Myanmar*, 4 September 2002. [http://mission.itu.ch/MISSIONS/Myanmar/02n1m/n020904.htm#1\\_](http://mission.itu.ch/MISSIONS/Myanmar/02n1m/n020904.htm#1_)

<sup>54</sup> 'Chinese Companies to Build Burmese Hydropower Projects.' *BBC World Monitoring*, 2 September 2005.

<sup>55</sup> '集团公司最大机电设备成套出口合同--缅甸耶瓦水电站机电及金结合同签署 (Sinohydro Signs its Largest Machinery & Generator Export Contract for Burma's Yeywa Project).' *Sinohydro Website*, 17 December 2004. [http://www.sinohydro.com/portlet?pm\\_pl\\_id=7&pm\\_pp\\_id=13&COLUMNID=111111&ARTICLEID=11471464260025](http://www.sinohydro.com/portlet?pm_pl_id=7&pm_pp_id=13&COLUMNID=111111&ARTICLEID=11471464260025)

<sup>56</sup> 'Prime Minister General Soe Win & Party Visit Guilin.' *The New Light of Myanmar*, 6 November 2006. <http://mission.itu.ch/MISSIONS/Myanmar/06n1m/n061106.htm>

<sup>57</sup> '缅甸耶瓦水电站碾压混凝土大坝开仓浇筑 (Roller-compacted Concrete Pouring Begins at Burma's Yeywa Hydropower Plant).' *CGGC Website*, 6 June 2006. <http://www.gzbgj.com/article.asp?id=449>



VIII have been completed,<sup>58</sup> and in December 2006, the 500 m long roller compacted concrete supply line became fully operational.<sup>59</sup> As of April 2007, 40% of the concrete required for the dam had been poured, bringing the left bank to a height of 127.4 m and the right bank to 109.4 m.<sup>60</sup> By December 2007, diversion tunnels 1 and 2 were completed, as were concrete pouring for diversion structures and earth work for the switch yard.<sup>61</sup> Official reports claim that CGGC aims to complete construction a half year before the final December 2008 deadline,<sup>62</sup> and also mention visits by officials from China EXIM Bank in 2007 and 2008<sup>63</sup> and Switzerland's COLENCO Power Engineering Co.<sup>64</sup> China National Electric Equipment Co. (CNEEC) signed an MoU in March 2004 with Burma for the construction of a dam gate for the Yeywa project.<sup>65</sup> In November 2006, CNEEC met with Burmese representatives in Guilin, Guangxi to discuss the delivery of mechanical equipment.<sup>66</sup>

Sinohydro's 1<sup>st</sup> Engineering Bureau signed a contract with China National Electric Equipment Co. (CNEEC) in May 2004 for materials and the installation of metal structures.<sup>67</sup> In November 2006, Sinohydro and Burmese representatives discussed the delivery of hydraulic steel turbines and generators.<sup>68</sup>

Hunan Savoo Oversea Water & Electric Engineering Co. has secured a bid for the HSS1.<sup>69</sup>

*See Yeywa Substation for additional information about the involvement of Beijing Electric Power Construction Research Institute of State Grid Corporation of China, Central China Power Grid Co., China National Heavy Machinery Co. (CHMC), and China Power Grid Co. in the distribution of electric power from the Yeywa Hydropower Plant.*

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<sup>58</sup> '缅甸耶涯项目完成一期砼浇筑任务 (Phase I Concrete Pouring at Yeywa Project Completed).' *CGGC Website*, 6 June 2006. <http://www.gzbgj.com/article.asp?id=445>; '缅甸耶涯项目部开展立功劳动竞赛 (Yeywa Project Bureau Launch Labor Competition).' *CGGC Website*, 10 October 2006. <http://www.gzbgj.com/article.asp?id=711>; & '缅甸耶涯项目部举行 5&7 期碾压砼施工提前完工庆典 (Celebration for the Early Completion of Yeywa Project Phases V & VII).' *CGGC Website*, 16 February 2007. <http://www.gzbgj.com/article.asp?id=745>.

<sup>59</sup> '缅甸耶涯水电站供料线贯通运行 (Burma's Yeywa Hydropower Plant Concrete Supply Line is Functional).' *CGGC Website*, 5 December 2006. <http://www.gzbgj.com/article.asp?id=726>

<sup>60</sup> '缅甸耶涯大坝 RCC 浇筑突破百万立方米 (CGGC Yeywa Project Dept. Hit 1 million m<sup>3</sup> RCC).' *CGGC Website*, 18 April 2007. <http://www.gzbgj.com/article.asp?id=782>

<sup>61</sup> 'Senior General Than Shwe Inspects Myogyi Multi-purpose Dam Project, Yeywa Hydropower Project.' *The New Light of Myanmar*, 13 December 2007. <http://mission.itu.ch/MISSIONS/Myanmar/07n1m/n071213.htm> [Thanks to Courier Research Associates for providing this link.]

<sup>62</sup> '缅甸耶涯项目部：碾压混凝土土月浇筑创新高 (图) (Burma Yeywa Project Bureau: New Innovations in RCC Pouring).' *CGGC Website*, 16 October 2007. <http://www.gzbgj.com/article.asp?id=881>; & Vice President of China Exim Bank Visited Yeywa HPP in Myanmar, *CGGC Website*, 27 March 2008. <http://www.gzbgj.com/english/article.asp?id=841>

<sup>63</sup> '中国进出口银行副行长李郡考察缅甸耶涯水电站 (China EXIM Bank Inspects Yeywa Hydropower Plant).' *CGGC Website*, 28 February 2008. <http://www.gzbgj.com/article.asp?id=993&tab=znews&word=缅甸>

<sup>64</sup> '缅甸水电一部部长赞 CGGC 最有实力 (Burma's Ministry of Electric Power 1 Praises CGGC).' *CGGC Website*, 18 September 2006. <http://www.gzbgj.com/article.asp?id=689>; & '缅甸总理梭温视察耶涯工程 (Burmese Prime Minister Soe Win Inspects the Yeywa Hydropower Project).' *CGGC Website*, 27 September 2006. <http://www.gzbgj.com/article.asp?id=705>

<sup>65</sup> 'Chinese Companies to Build Burmese Hydropower Projects.' *BBC World Monitoring*, 2 September 2005

<sup>66</sup> 'Prime Minister General Soe Win & Party Visit Guilin.' *The New Light of Myanmar*, 6 November 2006. <http://mission.itu.ch/MISSIONS/Myanmar/06n1m/n061106.htm>

<sup>67</sup> '中国水电一局九分局注重国际建筑市场开发 (Sinohydro 1<sup>st</sup> Engineering Bureau, 9<sup>th</sup> Branch's International Market Developments).' *Sinohydro Website*, 17 January 2007. [http://www.sinohydro.com/portlet?pm\\_pl\\_id=7&pm\\_pp\\_id=13&ARTICLEID=11471537840078&COLUMNID=11424148920001&CHCOLUMNID=11443003710001&GSCOLUMNID=-1](http://www.sinohydro.com/portlet?pm_pl_id=7&pm_pp_id=13&ARTICLEID=11471537840078&COLUMNID=11424148920001&CHCOLUMNID=11443003710001&GSCOLUMNID=-1)

<sup>68</sup> 'Prime Minister General Soe Win & Party Visit Guilin.' *The New Light of Myanmar*, 6 November 2006. <http://mission.itu.ch/MISSIONS/Myanmar/06n1m/n061106.htm>

<sup>69</sup> '公司简介 (Brief Introduction).' *Hunan Savoo Oversea Water & Electric Engineering Co. Website*. <http://www.hhpdi.com/hpdi/ShowArticle.asp?ArticleID=113> [Thanks to Burma Relief Center for providing this link.]

## **PEGU DIVISION**

### **Kapaung (30 MW) (Taungoo Township)**

In September 2006, China National Heavy Machinery Co. (CHMC) was invited by Burma's Ministry of Electric Power 1 to undertake construction at the Kapaung Dam.<sup>70</sup> CHMC reports that as of April 2007 the initial phase of construction has been completed,<sup>71</sup> and in July 2007 the last of six shipments of construction materials worth US\$ 55.64 million was sent from China to Burma, which was in keeping with the goal of bringing the power plant online by October 2007.<sup>72</sup> As of September 2007, more than 86% of construction has been completed,<sup>73</sup> and in March 2008 technicians from CHMC attended the opening ceremony for the reservoir.<sup>74</sup> The hydropower plant is currently operational.<sup>75</sup>

China National Electric Equipment Co. (CNEEC) met with Burmese representatives in November 2006 to discuss the delivery of electrical and mechanical equipment for this project.<sup>76</sup> In March 2008 technicians from CNEEC attended the opening ceremony for the reservoir.<sup>77</sup>

Hunan Savoo Oversea Water & Electric Engineering Co. provided metal structures.<sup>78</sup>

### **Kun (Kunchaung) (60 MW), Sittaung River (Phyu Township)**

China National Heavy Machinery Co. (CHMC) signed contracts with the Ministry of Electric Power on March 24, 2004 for three 20 MW generators as well as metal structures.<sup>79</sup> In May 2004, CHMC signed a contract with Tianjin ALSTROM for the supply of three 22 MW Francis turbine generators,<sup>80</sup> as well as a design contract with Guangxi Electric Power Industry Investigation Design & Research Institute.<sup>81</sup> CHMC reports suggest that the Kun Hydropower Plant should be completed and operational by December 2008.<sup>82</sup>

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<sup>70</sup> ‘陆文俊总经理赴缅甸参加在建水电站项目进度协调会 (CHMC General Manager Visits Burma for Hydropower Plant Meeting).’ *CHMC Website*, 26 September 2006.

<http://www.chmc2003.net/news.do?cmd=show&id=1553>

<sup>71</sup> ‘“CHMC No Problem” – 缅甸 KABAUNG 水电站建设现场纪实 (CHMC Construction at Burma's Kabaung Hydropower Plant).’ *CHMC Website*, 30 April 2007. <http://www.chmc2003.net/news.do?cmd=show&id=1666>

<sup>72</sup> ‘陆文俊总经理赴缅甸参加在建水电站项目进度协调会 (CHMC General Manager Visits Burma for Hydropower Plant Meeting).’ *CHMC Website*, 26 September 2006.

<http://www.chmc2003.net/news.do?cmd=show&id=1553>

<sup>73</sup> ‘Ongoing Hydropower Projects to be Completed on Schedule.’ *The New Light of Myanmar*, 28 September 2007.

<http://burmalibrary.org/docs4/NLM2007-09-28.pdf>

<sup>74</sup> ‘Khabaung Reservoir Opened in Ottwin Township on Completion of Projects.’ *The New Light of Myanmar*, 23 March 2008. <http://www.myanmar.com/newspaper/nlm/>

<sup>75</sup> ‘缅甸 Kabaung 水电站成功发电 (Kabaung Dam Generates Electricity).’ *China National Heavy Machinery Co. Website*, 27 March 2008. <http://www.chmc2003.net/news.do?cmd=show&id=1904>

<sup>76</sup> ‘Prime Minister General Soe Win & Party Visit Guilin.’ *The New Light of Myanmar*, 6 November 2006.

<http://mission.itu.ch/MISSIONS/Myanmar/06nlm/n061106.htm>

<sup>77</sup> ‘Khabaung Reservoir Opened in Ottwin Township On Completion of Projects, Bago Division to be Region on which State can Rely in Agricultural & Electric Sectors.’ *The New Light of Myanmar*, 23 March 2008.

<http://www.myanmar.com/newspaper/nlm/>

<sup>78</sup> ‘公司简介 (Brief Introduction).’ *Hunan Savoo Oversea Water & Electric Engineering Co. Website*.

<http://www.hhpdi.com/hhpdi/ShowArticle.asp?ArticleID=113> [Thanks to Burma Relief Center for providing this link.]

<sup>79</sup> ‘缅甸 KUN 水电站项目签约 (Burma's Kun Hydropower Plant Project Agreement Signed).’ *CHMC Website*, 10 May 2004. <http://www.chmc2003.net/news.do?cmd=show&id=1053>

<sup>80</sup> ‘ALSTOM Wins 2 Hydro Contracts in China.’ *ALSTOM Brazil Website*.

[http://www.alstom.com.br/Ingles/Noticias\\_Detalhes.asp?noticia=307&Idioma=8](http://www.alstom.com.br/Ingles/Noticias_Detalhes.asp?noticia=307&Idioma=8)

<sup>81</sup> ‘缅甸 KUN 水电站项目顺利执行 (Burma's Kun Hydropower Plant Project Smoothly Executed).’ *CHMC Website*, 29 June 2004. <http://www.chmc2003.net/news.do?cmd=show&id=1071>

<sup>82</sup> ‘陆文俊总经理赴缅甸参加在建水电站项目进度协调会 (CHMC General Manager Visits Burma for Hydropower Plant Meeting).’ *CHMC Website*, 28 September 2006.

<http://www.chmc2003.net/news.do?cmd=show&id=1553>



Sinohydro's 1<sup>st</sup> Engineering Bureau signed contracts worth RMB 12 million with China National Electric Equipment Co. (CNEEC) for metal structure construction.<sup>83</sup> In December 2006, Sinohydro's 1<sup>st</sup> Engineering Bureau has signed two additional contracts worth RMB 26.66 million with China National Heavy Machinery Co. (CHMC) for building materials and installation.<sup>84</sup>

China CAMC (Construction & Agricultural Machinery Import & Export Corporation) Engineering Co. completed a feasibility study in the 1990s.<sup>85</sup>

### **Kyauk**

Sinohydro's 14<sup>th</sup> Engineering Bureau lists this as an international project which it has undertaken, presumably by providing construction services; however, additional information remains vague.<sup>86</sup>

### **Kyauk Naga (75 MW), Shwegyin River (Shwegyin Township)**

China Gezhouba Group Co. (CGGC) reports that it signed a contract with the SPDC to supply and install machinery and power-generating equipment in September 2007.<sup>87</sup>

### **Phyu (20 MW), Phyu River (Phyu Township)**

China Gezhouba Group Co. (CGGC) signed a contract in January 2007 for two sets of hydraulic generating units as well as all electrical and mechanical equipment, with a supply time of 21 months.<sup>88</sup>

### **Thaukyegat (150 MW), Thaukyayka (Day Loh) River**

See *Thaukyegat (150 MW) in Karen State*

### **Yenwe (25 MW), Yenwe Creek (Kyaukdagah Township)**

Hunan Savoo Oversea Water & Electric Engineering Co. provided a building plan for this plant which was to open in January 2007, pending the arrival of turbines from China.<sup>89</sup> The 1,050 foot long 251 foot high earth dam was inaugurated in early February 2007.<sup>90</sup>

China National Electric Equipment Co. (CNEEC) met with Burmese representatives in November 2006 to discuss the delivery of electrical and mechanical equipment for this project.<sup>91</sup>

China International Trust & Investment Co. (CITIC) Technology Co. met with Burmese Prime Minister Soe Win in November 2006 to discuss matters relating to the penstock and tunnel lining.<sup>92</sup>

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<sup>83</sup> '中国水电一局九分局注重国际建筑市场开发 (Sinohydro 1<sup>st</sup> Engineering Bureau, 9<sup>th</sup> Branch's International Market Developments).' *Sinohydro Website*, 17 January 2007.

[http://www.sinohydro.com/portlet?pm\\_pl\\_id=7&pm\\_pp\\_id=13&ARTICLEID=11471537840078&COLUMNID=11424148920001&CHCOLUMNID=11443003710001&GSCOLUMNID=-1](http://www.sinohydro.com/portlet?pm_pl_id=7&pm_pp_id=13&ARTICLEID=11471537840078&COLUMNID=11424148920001&CHCOLUMNID=11443003710001&GSCOLUMNID=-1)

<sup>84</sup> Ibid.

<sup>85</sup> 'Myanmar Snap Trade Directory.' *Myanmar Snap*. <http://www.myanmarsnap.com/investment07.asp> [Thanks to Courier Research Associates for providing this link.]

<sup>86</sup> 'Domestic & Overseas Projects.' *Sinohydro 14<sup>th</sup> Engineering Bureau Website*. <http://www.fcbmis.com/English/Overseas%20Projects.htm>

<sup>87</sup> '缅甸水津电站机电设备设计与供货合同签订 (Burma Shwegyin Hydropower Plant Contract Signed).' *CGGC Website*, 11 September 2007. <http://www.gzbgj.com/article.asp?id=879>

<sup>88</sup> 'Contract Signing of the Design & Supply of Electrical, Mechanical Equipments For Phyu Hydropower Project In Myanmar.' *CGGC Website*. [http://www.gzbgj.com/english\\_n/news08.htm](http://www.gzbgj.com/english_n/news08.htm)

<sup>89</sup> '公司简介 (Brief Introduction).' *Hunan Savoo Oversea Water & Electric Engineering Co. Website*.

<http://www.hhpd.com/hhpd/ShowArticle.asp?ArticleID=113> [Thanks to Burma Relief Center for providing this link.]; & 'Power Plant to be Ready in September.' *Myanmar Times*, 6 November 2006.

<sup>90</sup> 'Prime Minister General Soe Win Attends Inauguration of Yenwe Hydroelectric Power Station.' *The New Light of Myanmar*, 11 February 2007. <http://mission.itu.ch/MISSIONS/Myanmar/07nln/n070211.htm> [Thanks to Courier Research Associates for providing this link.]

<sup>91</sup> 'Prime Minister General Soe Win & Party Visit Guilin.' *The New Light of Myanmar*, 6 November 2006.

<http://mission.itu.ch/MISSIONS/Myanmar/06nln/n061106.htm>

<sup>92</sup> Ibid.

### **Zaungtu (20 MW), Upper Bago River (Taikkyi Village, Bago Township)**

Yunnan Machinery & Equipment Import & Export Co. began work on this project in 1994.<sup>93</sup> In March 2000, this 45m high dam was inaugurated.<sup>94</sup>

## **SAGAING DIVISION**

### **Thapanseik (30 MW), Mu River (Thapanseik Village, Kyunhla Township)**

Sinohydro's 1<sup>st</sup> Engineering Bureau assisted with the installation of power generating equipment and structures and secured maintenance contracts worth RMB 14.88 million for this project which was completed in May 2002.<sup>95</sup>

China International Trust & Investment Co. (CITIC) Technology Co. signed an MoU with the Ministry of Electric Power in November 1998<sup>96</sup> and completed this project with US\$ 20 million financing in the form of seller's export credit from China EXIM Bank.<sup>97</sup>

### **Zi Chung (1.26 MW)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) undertook this project in 1991.<sup>98</sup>

## **SHAN STATE**

### **Chinshwehaw (0.2 MW)**

Yunnan Machinery & Equipment Import & Export Co. undertook this project in 1993.<sup>99</sup>

### **Kengtawng (54 MW), Namtein Creek (Mone Township)**

Hunan Savoo Oversea Water & Electric Engineering Co. is working on metal structures for the power plant, which as of January 2008 was 86% complete and could be online within the year.<sup>100</sup>

A joint Zhejiang Orient Holding Group and China National Electric Equipment Co. (CNEEC) consortium signed contracts worth US\$ 11.5-15 million in June 2005 for construction materials and electrical equipment for this three 18 MW turbine generator power plant.<sup>101</sup>

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<sup>93</sup> 'Overseas & Domestic Projects.' *YMEC Website*. [http://www.ymec.com.cn/cn/about\\_yj.htm](http://www.ymec.com.cn/cn/about_yj.htm); & 'Zaungtu Hydropower Station (Myanmar).' *YMEC Website*. [http://www.ymec.com.cn/en/hpp/Project\\_zd.htm](http://www.ymec.com.cn/en/hpp/Project_zd.htm)

<sup>94</sup> 'Newly Built Zaungtu Dam & Hydel Power Plant in Bago Division Inaugurated.' *The New Light of Myanmar*, 23 March 2000. [http://mission.itu.ch/MISSIONS/Myanmar/00nlm/n000323.htm#\(4\)](http://mission.itu.ch/MISSIONS/Myanmar/00nlm/n000323.htm#(4))

<sup>95</sup> '中国水电一局九分局注重国际建筑市场开发 (Sinohydro 1<sup>st</sup> Engineering Bureau, 9<sup>th</sup> Branch's International Market Developments).' *Sinohydro Website*, 17 January 2007. [http://www.sinohydro.com/portlet?pm\\_pl\\_id=7&pm\\_pp\\_id=13&ARTICLEID=11471537840078&COLUMNID=11424148920001&CHCOLUMNID=11443003710001&GSCOLUMNID=-1](http://www.sinohydro.com/portlet?pm_pl_id=7&pm_pp_id=13&ARTICLEID=11471537840078&COLUMNID=11424148920001&CHCOLUMNID=11443003710001&GSCOLUMNID=-1)

<sup>96</sup> '缅甸德畔赛及孟河水电站 (Burma's Thapanseik & Mone River Hydropower Plants).' *Sinohydro Website*. [http://www.sinohydro.com/portlet?pm\\_pl\\_id=7&pm\\_pp\\_id=29&COLUMNID=11509592350001](http://www.sinohydro.com/portlet?pm_pl_id=7&pm_pp_id=29&COLUMNID=11509592350001)

<sup>97</sup> '中国承包的缅甸德畔色水电站竣工 (Chinese Funded Thapanseik Hydropower Plant Completed).' *HWCC*, 12 July 2002. <http://www.hwcc.gov.cn/nsbd/NewsDisplay.asp?Id=40778>; & Platts. 2007. *Platts Myanmar Country Energy Profile*. [Thanks to Courier Research Associates for providing this document.]

<sup>98</sup> 'Overseas & Domestic Projects.' *YMEC Website*. [http://www.ymec.com.cn/cn/about\\_yj.htm](http://www.ymec.com.cn/cn/about_yj.htm)

<sup>99</sup> Ibid.

<sup>100</sup> '公司简介 (Brief Introduction).' *Hunan Savoo Oversea Water & Electric Engineering Co. Website*. <http://www.hhpd.com/hhpd/ShowArticle.asp?ArticleID=113> [Thanks to Burma Relief Center for providing this link]; & 'Minister Goes on Inspection Tour of Kengtawng Hydropower Project.' *The New Light of Myanmar*, 18 January 2008. <http://mission.itu.ch/MISSIONS/Myanmar/08nlm/n080118.htm> [Thanks to Courier Research Associates for providing this link.]

<sup>101</sup> 'Hydro-electric Power Department, Chinese Consortium Ink Two Agreements.' *The New Light of Myanmar*, 17 June 2005. <http://mission.itu.ch/MISSIONS/Myanmar/05nlm/n050617.htm#Hydro-electric%20Power%20Department,%20Chinese%20consortium%20ink%20two%20agreements>; & Platts. 2007. *Platts Myanmar Country Energy Profile*. [Thanks to Courier Research Associates for providing this document.]

China National Electric Equipment Co. (CNEEC) signed an additional US\$ 3.5 million contract with the Ministry of Electric Power for ironwork in June 2005.<sup>102</sup> In November 2006, CNEEC met with Burmese representatives to discuss the delivery mechanical equipment for this project.<sup>103</sup>

See *Kengtawng Transmission Line* for more information about the involvement of Zhejiang Orient Holding Group in the distribution of electric power from the Kengtawng Hydropower Plant.

#### **Kunhein (Kunheng) (0.15 MW)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) undertook this project in 1990.<sup>104</sup>

#### **Kunlon (0.5 MW)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) undertook this project in 1993.<sup>105</sup>

#### **Kyaing Ton (Kengtung) (0.32/0.48 MW)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) undertook this project in 1990.<sup>106</sup>

#### **Kyaukme (4 MW)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) undertook this project in 1992.<sup>107</sup>

#### **Mepan (Meipan) (1.26 MW) (Mong Hsat Township)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) undertook this project in 1991, and an inauguration ceremony was held on 13 May 2002.<sup>108</sup>

#### **Nam Myaw (4 MW)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) undertook this project in 1992.<sup>109</sup>

#### **Nam Wop (3MW) (Kyaing Ton Township)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) undertook this project around 1992.<sup>110</sup>

#### **Shweli I (600 MW), Shweli River (Man Tat Village, Namhkam Township)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) began work in February 2004, but Burma's inability to secure funding halted all progress in July 2005.<sup>111</sup> In August 2006, YMEC joined with Yunnan Huaneng Lancang River Hydropower Development Co. and Yunnan Power Grid Co. to

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<sup>102</sup> 'Hydro-electric Power Department, Chinese Consortium Ink Two Agreements.' *The New Light of Myanmar*, 17 June 2005. <http://mission.itu.ch/MISSIONS/Myanmar/05nlm/n050617.htm#Hydro-electric%20Power%20Department,%20Chinese%20consortium%20ink%20two%20agreements> [Thanks to Courier Research Associates for providing this link.]

<sup>103</sup> 'Prime Minister General Soe Win & Party Visit Guilin.' *The New Light of Myanmar*, 6 November 2006. <http://mission.itu.ch/MISSIONS/Myanmar/06nlm/n061106.htm>

<sup>104</sup> 'Overseas & Domestic Projects.' *YMEC Website*. [http://www.ymec.com.cn/cn/about\\_yj.htm](http://www.ymec.com.cn/cn/about_yj.htm)

<sup>105</sup> Ibid.

<sup>106</sup> Ibid.

<sup>107</sup> Ibid.

<sup>108</sup> Ibid; & 'Regional Development Projects Inspected in Shan State (East).' *New Light of Myanmar*, 15 May 2002. [http://mission.itu.ch/MISSIONS/Myanmar/02nlm/n020516.htm#\(%203%20](http://mission.itu.ch/MISSIONS/Myanmar/02nlm/n020516.htm#(%203%20) [Thanks to Courier Research Associates for providing this link.]

<sup>109</sup> 'Overseas & Domestic Projects.' *YMEC Website*. [http://www.ymec.com.cn/cn/about\\_yj.htm](http://www.ymec.com.cn/cn/about_yj.htm)

<sup>110</sup> Ibid.

<sup>111</sup> '激战瑞丽江——水电十四局瑞丽江电站截流施工纪实 (Shweli River Fierce Battle-Shweli Dam 14<sup>th</sup> Bureau Damming Construction).' *Sinohydro Website*, 26 February 2007. [http://www.sinohydro.com/portlet?pm\\_pl\\_id=7&pm\\_pp\\_id=13&COLUMNID=111111&ARTICLEID=11724607890001](http://www.sinohydro.com/portlet?pm_pl_id=7&pm_pp_id=13&COLUMNID=111111&ARTICLEID=11724607890001) For extensive photographs of construction at the Shweli I Dam see '瑞丽江项目图库 (Shweli River Project Bureau Photographs).' *Sinohydro's 14<sup>th</sup> Engineering Bureau Dali Sub-bureau Website*, 29 June 2007. <http://www.fcdbl.com/bencandy.php?fid=61&id=394>

create the Yunnan Joint Power Development Co. (YUPD).<sup>112</sup> In December 2006, YUPD (80%) and the Ministry of Electric Power 1 (20%) jointly created the Shweli River I Power Station Co., turned the dam into a Build-Operate-Transfer (BOT) project, and increased the installed capacity from 400 to 600 MW.<sup>113</sup> As of May 2007 the project is half complete, and will supply electricity to Mandalay.<sup>114</sup>

Sinohydro's 14<sup>th</sup> Engineering Bureau and the Dali Sub-bureau began construction in June 2006, and by December 2006 the diversion tunnel had been completed and the Shweli River was blocked.<sup>115</sup> Sinohydro's 14<sup>th</sup> Engineering Bureau secured a bid for the construction and installation of metal structures in January 2007.<sup>116</sup> In July 2007 Sinohydro's 14<sup>th</sup> Engineering Bureau signed new construction contracts with the goal of completing the project by the 30 June 2009 deadline,<sup>117</sup> and in August 2008, the first hydroturbine generator came online for testing.<sup>118</sup>

CHECC Kunming Hydroelectric Investigation, Design & Research Institute, together with Yunnan Joint Power Development Co., inspected machinery quality at the Shweli dam in March 2007.<sup>119</sup>

Changjiang Institute of Surveying, Planning & Design Research undertook demolition work for the diversion tunnel and cofferdam in December 2006.<sup>120</sup>

*See Shweli I Substation & Transmission Line for more information about the involvement of Central China Power Grid International Economic & Trade Co., China Southern Power Grid Co., Ningbo Huyong Electric Power Material Co., Sichuan Machinery & Equipment Import & Export Co., and Yunnan Electric Power Design Institute in the distribution of electric power from the Shweli I Hydropower Plant.*

#### **Shweli II (460 MW), Shweli River**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) is involved in this project.<sup>121</sup>

#### **Shweli III (360 MW), Shweli River**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) is involved in this project.<sup>122</sup>

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<sup>112</sup> '中国在缅甸投资的首个水电项目成功截流 (China's First Hydropower Investment in Burma Successfully Dammed).' *China Electricity Council*, 13 December 2006. <http://www.cec.org.cn/news/showc.asp?id=92488>

<sup>113</sup> '瑞丽江电站胜利实现截流 (Shweli River Hydropower Station Triumphantly Blocks Water).' *Dali Sub-bureau of Sinohydro's 14<sup>th</sup> Engineering Bureau Website*, 11 December 2006. <http://www.fcddl.com/bencandy.php?fid=3&id=26>

<sup>114</sup> 'Burma Committed to Building more Hydropower Plants.' *BBC Financial Times Information*, 7 May 2007.

<sup>115</sup> '集团公司水电十四局承建的缅甸瑞丽江水电站成功截流 (图) (14<sup>th</sup> Bureau Succeed in Damming the Ruili River).' *Sinohydro Website*, 15 December 2006.

[http://www.sinohydro.com/english/portlet?pm\\_pl\\_id=7&pm\\_pp\\_id=13&COLUMNID=111111&ARTICLEID=11670369310001](http://www.sinohydro.com/english/portlet?pm_pl_id=7&pm_pp_id=13&COLUMNID=111111&ARTICLEID=11670369310001)

<sup>116</sup> '我局中标缅甸瑞丽江一级水电站厂房枢纽土建及金属结构安装工程 (Sinohydro 14<sup>th</sup> Engineering Bureau Secures Shweli I Bid).' *Sinohydro 14<sup>th</sup> Engineering Bureau Website*, 12 January 2007.

[http://www.fcblmis.com/sd\\_nm/2007/1-12/151512.html](http://www.fcblmis.com/sd_nm/2007/1-12/151512.html)

<sup>117</sup> '缅甸瑞丽江一级电站工程总承包合同在昆签字 (Contracts Signed in Kunming for Burma's Shweli I Dam).' *Sinohydro's 14<sup>th</sup> Engineering Bureau Website*, 5 July 2007.

<http://www.fcblmis.com/news/jnyw/2007/75/0775101710K58IHJ2120G3BDAJ06D1.html>

<sup>118</sup> '瑞丽江电站首台机组调试正式启动 (Shweli Dam First Hydroturbine Generator Testing).' *Dali Sub-Bureau of Sinohydro's 14<sup>th</sup> Engineering Bureau Website*, 24 August 2008.

<http://www.fcddl.com/bencandy.php?fid=37&id=1114>

<sup>119</sup> '瑞丽江电站厂房基坑开挖通过质量验收 (Shweli Hydropower Project Machinery Undergoes Quality Assessment).' *Sinohydro's 14<sup>th</sup> Engineering Bureau Website*, 10 March 2007.

<http://www.fcddl.com/bencandy.php?fid=37&id=193>

<sup>120</sup> '缅甸瑞丽江水电站导流洞进出口围堰爆破圆满成功 (Shweli River Hydropower Plant Diversion Tunnel & Cofferdam Complete).' *Changjiang Institute of Surveying, Planning & Design Research Website*, 13 December 2006. <http://www.cjwsjy.com.cn/News/specialnews/200612133157.htm>

<sup>121</sup> 'Overseas & Domestic Projects.' *YMEC Website*. [http://www.ymec.com.cn/cn/about\\_yj.htm](http://www.ymec.com.cn/cn/about_yj.htm)

<sup>122</sup> *Ibid.*

### **Tasang (7100 MW), Salween River**

China Gezhouba Group Co. (CGGC) signed an MoU with the Tasang Hydropower Co. in March 2007 for the construction of two 1200m long, 8m in diameter diversion tunnels.<sup>123</sup> In November 2007, CGGC acquired a 51% stake in the Tasang Dam, leaving Thai MDX with a 24% stake and Burma's Department of Hydropower Implementation with a 25% stake.<sup>124</sup> In January 2008, an unnamed Chinese company set up sixty 17-30 yard long pillars on both banks of the Salween River at the Tasang site.<sup>125</sup> A ground-breaking ceremony was held in March 2007<sup>126</sup> and construction supposedly began in April 2007, while some media claim that construction has been put on hold indefinitely.<sup>127</sup>

### **Upper Thanlwin (2400 MW), Salween River**

In April 2007, Than Shwe urged that the Upper Thanlwin project be implemented as soon as possible and, in May 2007, Chinese technicians conducted a feasibility study for this project which is expected to be completed in 2008.<sup>128</sup> No decision had been made on whether to expand the Upper Thanlwin project into two dams between the towns of Konekyan and Kunlon, as the original MoU did not specify quantity of dams and the companies involved have not disclosed their intentions.<sup>129</sup>

Yunnan Power Grid Co. and CHECC Mid-South Design & Research Institute surveyed a 147 km section of the upper Salween River in December 2006.<sup>130</sup>

Hanergy Holding Group (formerly China Farsighted Investment Group) signed an MoU with Burma on 5 April 2007.<sup>131</sup>

China Gold Water Resources Co. signed an MoU with Burma on 5 April 2007.<sup>132</sup>

China Hydropower Engineering Consulting Group Co. (CHECC), CHECC Kunming Hydroelectric Investigation Design & Research Institute (KHIDI), and China Hanergy Holding Group (formerly China Farsighted Investment Group) met in Beijing in March 2008 to discuss the feasibility of the Kunlon Dam, on the mainstream of the Salween River approximately 25 km from the Chinese border at Qingshuihe Port.<sup>133</sup> The Department of Commerce of Yunnan Province reports that KHIDI signed agreements with Burma's Ministry of Electric Power for US\$ 5,270,000 in September 2007.<sup>134</sup>

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<sup>123</sup> '缅甸市场开发再传捷报 (News of Victory from Burmese Market Developments).' *CGGC Website*, 16 March 2007. <http://www.gzbgj.com/article.asp?id=749>

<sup>124</sup> 'Chinese Firm takes 51pc of Tasang Hydropower Project.' *The Myanmar Times*, 19 November 2007.

<http://www.mmtimes.com/no393/b004.htm> [Thanks to Courier Research Associates for providing this link.]

<sup>125</sup> 'Chinese Dam Builders Set Up 60 Pillars for Tasang Dam.' *Shan Herald Agency for News*, 16 January 2008.

<http://www.shanland.org/environment/2008/chinese-dam-builders-set-up-60-pillars-for-tasang-dam/>

<sup>126</sup> 'Tar-hsan Hydropower Project Construction Begins.' *The New Light of Myanmar*, 5 April 2007.

<http://mission.itu.ch/MISSIONS/Myanmar/07nlm/n070405.htm>

<sup>127</sup> 'Myanmar Pushes Ahead Thanlwin Hydro Projects.' *International Water Power & Dam Construction*, 17 April 2007.

<http://www.waterpowermagazine.com/story.asp?sectioncode=130&storyCode=2043576>; 'Mystery Decision

Puts Burma Dams on Hold.' *Bangkok Post*, 12 February 2008; & 'Samak Green Lights the Salween Hydro-dam.'

*The Irrawaddy*, 8 March 2008. [http://www.bangkokpost.com/breaking\\_news/breakingnews.php?id=125863](http://www.bangkokpost.com/breaking_news/breakingnews.php?id=125863)

<sup>128</sup> 'Lt-Gen Kyaw Win Attends Cultivation of 300 Acres of Physic Nut in Hsenwi Station.' *The New Light of*

*Myanmar*, 20 May 2007. <http://mission.itu.ch/MISSIONS/Myanmar/07nlm/n070520.htm>

<sup>129</sup> 'China Eyes Second Dam on Thanlwin.' *The Myanmar Times*, 14 May 2007.

<http://mmtimes.com/no366/b005.htm>

<sup>130</sup> '联合踏勘团顺利完成缅甸萨尔温江上游踏勘任务 (Survey Group Completes On-site Upper Salween River

Survey).' *Yunnan Power Grid Co. Website*, 28 December 2006. <http://www.yndw.com/showinfo.asp?id=37407>

<sup>131</sup> 'Myanmar Commits to Building more Hydropower Plants.' *People's Daily*, 7 May 2007.

[http://english.people.com.cn/200705/07/eng20070507\\_372570.html](http://english.people.com.cn/200705/07/eng20070507_372570.html)

<sup>132</sup> Ibid.

<sup>133</sup> '缅甸滚弄水电站可研阶段工程勘察设计技术大纲咨询会议在北京召开 (Feasibility Meeting for Burma's Kunlong Dam Held in Beijing).' *CHECC Website*, 11 March 2008.

[http://www.checc.cn/news/news.jsp?type=100&new\\_id=7254&target=](http://www.checc.cn/news/news.jsp?type=100&new_id=7254&target=)

<sup>134</sup> '2007年1-9月云南省外经业务统计 (Yunnan Province Overseas Operation Statistics January - September 2007).' *Department of Commerce of Yunnan Province Website*, 22 October 2007.

<http://www.bofcom.gov.cn/bofcom/433477000347254784/20071022/167375.html>



Sinohydro, China Southern Power Grid Co., and China Three Gorges Project Co. signed a strategic cooperation framework agreement for the development of the Salween River's hydropower resources at Sinohydro's headquarters in April 2008.<sup>135</sup>

### **Zawgyi I (18 MW), Zawgyi Creek (Yaksawk Township)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) undertook this run-of-the-river project in 1992.<sup>136</sup> In November 2007, YMEC representatives signed equipment supply contracts with the Ministry of Electric Power No. 1.<sup>137</sup>

Sinohydro's 14<sup>th</sup> Engineering Bureau lists this as an international project which it has undertaken, presumably by providing construction services.<sup>138</sup>

### **Zawgyi II (12 MW), Zawgyi Creek**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) undertook the installation of the gate and penstock in 1990,<sup>139</sup> and supplied the intake structure, filter, sluices and pressurized steel pipes for this dam that was inaugurated in March 2000.<sup>140</sup>

China Shanghai Corporation for Foreign Economic & Technological Co-operation (SFECO) provided two 6.4 MW generator units and accessorial equipment between July 1997 and October 1998.<sup>141</sup>

## **SUBSTATIONS & TRANSMISSION LINES**

### **Belin-Meikhtila-Taungtwingyi-Monywa**

Central China Power Grid Co. signed agreements with the Ministry of Electric Power worth US\$ 58.4 million in December 2006 for the expansion of an existing 230 kV substation, the construction of eight new 230 kV transformation substations, and two 230 kV, 340 km long transmission lines.<sup>142</sup> Construction began in July 2004.<sup>143</sup>

### **Belin Substation (Kyaukse Township, Mandalay Division)**

Central China Power Grid International Economic & Trade Co. signed a contract with the Ministry of Electric Power in January 2007 to supply equipment for a substation in Belin.<sup>144</sup>

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<sup>135</sup> '缅甸萨尔温江战略合作框架协议签署 (Salween River Strategic Cooperation Framework Agreement Signed).' *金融界*, 28 April 2008. <http://info.jrj.com.cn/news/2008-04-28/000003585891.html>

<sup>136</sup> 'Overseas & Domestic Projects.' *YMEC Website*. [http://www.ymec.com.cn/cn/about\\_yj.htm](http://www.ymec.com.cn/cn/about_yj.htm)

<sup>137</sup> 'Minister for Electric Power No 1 Receives President of YMEC.' *The New Light of Myanmar*, 30 November 2007. <http://mission.itu.ch/MISSIONS/Myanmar/07n1m/n071130.htm> [Thanks to Courier Research Associates for providing this link.]

<sup>138</sup> 'Domestic & Overseas Projects.' *Sinohydro 14<sup>th</sup> Engineering Bureau Website*. <http://www.fcbmis.com/English/Overseas%20Projects.htm>

<sup>139</sup> 'Overseas & Domestic Projects.' *YMEC Website*. [http://www.ymec.com.cn/cn/about\\_yj.htm](http://www.ymec.com.cn/cn/about_yj.htm); & 'Zawgyi Hydropower Station (Myanmar).' *YMEC Website*. [http://www.ymec.com.cn/en/hpp/Project\\_zj.htm](http://www.ymec.com.cn/en/hpp/Project_zj.htm)

<sup>140</sup> 'Government Endeavouring for Sufficient Power Supply Zawgyi Hydrel Power Station Launched.' *The New Light of Myanmar*, 17 March 2000. [http://mission.itu.ch/MISSIONS/Myanmar/00n1m/n000317.htm#\(2\)](http://mission.itu.ch/MISSIONS/Myanmar/00n1m/n000317.htm#(2)) [Thanks to Courier Research Associates for providing this link.]

<sup>141</sup> 'Overseas Contracted Engineering: Project List.' *SFECO Website*. <http://www.sfeco.net.cn/e/trade/list.asp>; & 'Government Endeavouring for Sufficient Power Supply Zawgyi Hydrel Power Station Launched.' *The New Light of Myanmar*, 17 March 2000. [http://mission.itu.ch/MISSIONS/Myanmar/00n1m/n000317.htm#\(2\)](http://mission.itu.ch/MISSIONS/Myanmar/00n1m/n000317.htm#(2)) [Thanks to Courier Research Associates for providing this link.]

<sup>142</sup> '谢明亮率华中电网公司经贸代表团访问缅甸 双方签署缅甸泊宁等三个输变电工程项目合同 (CCPGC Visits Burma & Signs Contracts for Transformation Substations & Transmission).' *CCPGC Website*, 5 January 2007. [http://intl.ccpge.com.cn/pub/huazhong/tpxw/wsjl/t20070105\\_10381.htm](http://intl.ccpge.com.cn/pub/huazhong/tpxw/wsjl/t20070105_10381.htm)

<sup>143</sup> '缅甸总理梭温率团访问华中电网有限公司 (Burmese Prime Minister Soe Win Visits CCPGC).' *CCPGC Website*, 7 November 2006. [http://202.110.186.75:8080/pub/huazhong/gjjldt/t20061107\\_9698.htm](http://202.110.186.75:8080/pub/huazhong/gjjldt/t20061107_9698.htm)

<sup>144</sup> 'China, Myanmar Ink Contract on Purchase of Electrical Goods.' *The New Light of Myanmar*, 4 January 2007. <http://mission.itu.ch/MISSIONS/Myanmar/07n1m/n070104.htm>; & Platts. 2007. *Platts Myanmar Country Energy Profile*. [Thanks to Courier Research Associates for providing this document.]

### **Kengtawng Transmission Line (Shan State)**

Zhejiang Orient Holding Group signed a US\$ 4.56 million contract with the Hydroelectric Power Department under the Ministry of Electric Power in 2005 to provide 132 kV cables and electrical equipment.<sup>145</sup> Electricity will be supplied to Loilem, Langkho, Taunggyi and the national grid.<sup>146</sup>

### **Mongsan Substation (Shan State)**

Central China Power Grid International Economic & Trade Co. signed a contract with the Ministry of Electric Power in January 2007 to supply equipment for a substation in Mongsan.<sup>147</sup>

### **Myaungdagar-Hlaingthagar-Yekyi**

Central China Power Grid International Economic & Trade Co. signed contracts in March 2004 for the expansion of the Myaungdagar 230 kV transformation substation, the construction of the Hlaingthagar 230 kV transformation substation, the construction of the Yekyi 230 kV transformation substation, and the construction of two (one 160 km and one 40 km) 230 kV split single loop transmission lines, with at least 90% of materials coming from China.<sup>148</sup>

### **Rangoon Dagon Substation (Rangoon Division)**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) started this 6,800 kV project in 1993.<sup>149</sup>

### **Rangoon-Yegy (Rangoon Division)**

Central China Power Grid Co. (CCPGC) and subsidiary Central China Power Grid International Economic & Trade Co. signed agreements with Burma worth US\$ 16.1 million in March 2004 for the construction of a 230 kV transformation substation and a 230 kV transmission line.<sup>150</sup>

### **Shweli I Substation & Transmission Lines (Shan State)**

Central China Power Grid International Economic & Trade Co. signed a contract with the Ministry of Electric Power in 2007 to supply equipment for a substation at the Shweli site.<sup>151</sup>

China Southern Power Grid Co. reports that in March 2007, Yunnan Electric Power Design Institute completed a feasibility study for a 220 kV transmission cable that would link the Shweli I site with hydropower projects on the Niyou River, a tributary of the Jinsha River, in China's Yunnan Province.<sup>152</sup>

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<sup>145</sup> 'Hydro-electric Power Department Inks Contract to Purchase Chinese Electrical Equipment.' *Myanmar Information Committee Yangon Information Sheet*, 23 August 2005. <http://www.myanmar-information.net/infosheet/2005/050823.htm> [Thanks to Courier Research Associates for providing this link.]

<sup>146</sup> Ibid.

<sup>147</sup> 'China, Myanmar Ink Contract on Purchase of Electrical Goods.' *The New Light of Myanmar*, January 4, 2007 <http://mission.itu.ch/MISSIONS/Myanmar/07nlm/n070104.htm>; & Platts. 2007. *Platts Myanmar Country Energy Profile*. [Thanks to Courier Research Associates for providing this document.]

<sup>148</sup> '华中电力国际经贸公司积极拓展缅甸市场-缅甸 M.H.Y.230KV 输电线路及变电站项目签约(CCPGC Enthusiastically Opens Burma Markets – Burma's M.H.Y. 230 kV Transmission Line & Substation Projects Signed).' *CCPGC Website*, 20 July 2004. [http://202.110.186.75:8080/pub/huazhong/swgc/t20041208\\_0721.htm](http://202.110.186.75:8080/pub/huazhong/swgc/t20041208_0721.htm); & '华中电力国贸公司承建缅甸 MHY 项目进展顺利 (CCGC's MHY Project Makes Progress).' *CCPGC Website*, 2 November 2006. [http://202.110.186.75:8080/pub/huazhong/tpxw/gcjt/20061102\\_10239.htm](http://202.110.186.75:8080/pub/huazhong/tpxw/gcjt/20061102_10239.htm)

<sup>149</sup> 'Overseas & Domestic Projects.' *YMEC Website*. [http://www.ymec.com.cn/cn/about\\_yj.htm](http://www.ymec.com.cn/cn/about_yj.htm)

<sup>150</sup> '华电国贸公司积极拓展缅甸市场 (CCPGC Enthusiastically Opens Burmese Market).' *CCPGC Website*, 8 December 2004. [http://202.110.186.75:8080/pub/huazhong/gjjldt/t20041208\\_0697.htm](http://202.110.186.75:8080/pub/huazhong/gjjldt/t20041208_0697.htm)

<sup>151</sup> 'China, Myanmar Ink Contract on Purchase of Electrical Goods.' *The New Light of Myanmar*, 4 January 2007 <http://mission.itu.ch/MISSIONS/Myanmar/07nlm/n070104.htm>; & Platts. 2007. *Platts Myanmar Country Energy Profile*. [Thanks to Courier Research Associates for providing this document.]

<sup>152</sup> '瑞丽江电站送出(缅甸侧)完成踏勘 (Shweli River Transmission Exploration Complete).' *China Southern Power Grid Website*, 19 March 2007. <http://www.csg.cn/news/compnewscon.aspx?id=10024&ItemCode=002007000000>



Sichuan Machinery & Equipment Import & Export Co. installed 356 km long 230 kV double transmission lines linking Shweli with Mandalay in 2003 under a US\$ 34.72 million agreement with Myanmar Electric Power Enterprise.<sup>153</sup>

Ningbo Huyong Electric Power Material Co. provided engineering services for the 230 kV-350 kV steel power transmission towers linking Shweli with Rangoon.<sup>154</sup>

#### **Shwesaryan Substation (Kyaukse Township, Mandalay Division)**

China Power Grid International Economic & Trade Co. signed a contract with the Ministry of Electric Power in January 2007 to supply equipment for a substation in Shwesaryan.<sup>155</sup>

#### **Yeywa Substation (Mandalay Division)**

Central China Power Grid Co. (CCPGC), following a meeting in December 2006 with the Ministry of Electric Power, drafted a letter of intent for the use of Chinese government export seller's credit in the amount of US\$ 200 million for the Sino-Burmese joint venture construction of a 500 kV transformation substation and transmission lines.<sup>156</sup>

China National Heavy Machinery Co. (CHMC) signed a US\$ 45.85 million contract with the Ministry of Electric Power Hydropower Bureau to install a 300 km 320 kV transmission cable and construct three substations over 20 months using Chinese Government funding.<sup>157</sup> 2006 reports from CHMC elaborate that Switzerland's COLENCO Power Engineering Co. provided consultant services to the project.<sup>158</sup> In March 2007, CHMC shipped 351 tons of construction materials to Burma,<sup>159</sup> and in November 2007 CHMC conducted testing at eight transformation and transmission towers together with China Power Grid Co. and Beijing Electric Power Construction Research Institute of State Grid Corporation of China.<sup>160</sup>

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<sup>153</sup> 'Myanmar Installs More Transmission Lines for New Power Plant.' *Xinhua General News Service*, 5 July 2007.

<sup>154</sup> 'About Huyong.' *Ningbo Huyong Electric Power Material Co. Website*. <http://www.hydl-cn.com/en/aboutus.htm> [Thanks to Courier Research Associates for providing this link.]

<sup>155</sup> 'China, Myanmar Ink Contract on Purchase of Electrical Goods.' *The New Light of Myanmar*, 4 January 2007 <http://mission.itu.ch/MISSIONS/Myanmar/07nlm/n070104.htm>; & Platts. 2007. *Platts Myanmar Country Energy Profile*. [Thanks to Courier Research Associates for providing this document.]

<sup>156</sup> '谢明亮率华中电网公司经贸代表团访问缅甸—双方签署缅甸泊宁等三个输变电工程项目合同 (CCPGC Visit to Burma – Bilateral Agreements for Belin Substation & Transmission Projects Signed).' *CCPGC Website*, 5 January 2007. [http://202.110.186.75:8080/pub/huazhong/gjjldt/t20070105\\_10380.htm](http://202.110.186.75:8080/pub/huazhong/gjjldt/t20070105_10380.htm)

<sup>157</sup> 'Chinese Companies to Build Burmese Hydropower Projects.' *BBC World Monitoring*, 2 September 2005; '热烈祝贺缅甸耶瓦水电站输变电项目合同签订 (Congratulations on the Signing of the Burma Yeywa Hydropower Plant Contract).' *CHMC Website*, 2 September 2005. <http://www.chmc2003.net/news.do?cmd=show&id=1264>; '缅甸 YEYWA 水电站输变电工程项目计划顺利折行中 (Burma's Yeywa Hydropower Plant Plans Proceeding Smoothly).' *CHMC Website*, 30 November 2006. <http://www.chmc2003.net/news.do?cmd=show&id=1594>; & '缅甸 YEYWA 输, 变电项目正式启动执行 (Burma Yeywa Distribution & Transformation Substation Begins Formal Implementation).' *CHMC Website*, 6 April 2006. <http://www.chmc2003.net/news.do?cmd=show&id=1436>

<sup>158</sup> '缅甸 YEYWA 输, 变电项目正式启动执行 (Burma Yeywa Distribution & Transformation Substation Begins Formal Implementation).' *CHMC Website*, 6 April 2006. <http://www.chmc2003.net/news.do?cmd=show&id=1436>

<sup>159</sup> '缅甸 YEYWA 输变电项目第一批发货任务圆满完成 (Burma's Yeywa Substation Project Begins Wholesale Production).' *CHMC Website*, 5 April 2007. <http://www.chmc2003.net/news.do?cmd=show&id=1654>

<sup>160</sup> '缅甸 YEYWA 输变电铁塔真型实验完成 (Burma Yeywa Transmission & Transformation Tower Test Complete).' *CHMC Website*, 30 November 2007. <http://www.chmc2003.net/news.do?cmd=show&id=1803>

## **UNKNOWN LOCATION**

### **Songpu (7.5 MW)**

CHECC Kunming Hydroelectric Investigation, Design and Research Institute lists this 50m tall hydropower project that was built between May 1997 and April 1999 on its website, however there is no additional information.<sup>161</sup>

### **‘Piaoliang’ (400 MW)**

China Gezhouba Group Co. (CGGC) signed an agreement with the Ministry of Electric Power. No. 1 in January 2007 for metal structures, electricity generating equipment and 230 kV transmission lines over 21 months.<sup>162</sup>

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<sup>161</sup> ‘缅甸松普水电站 (Songpu Hydropower Station in Myanmar).’ *KHIDI Website*.

<http://www.khidi.com:8083/ShowMess.asp?ArticleID=826>

<sup>162</sup> ‘缅甸漂亮水电站设备供货项目 (Burma ‘Piaoliang’ Hydropower Plant Equipment Project.’ *CGGC Website*, 25 July, 2008. [http://www.cggc.cn/news\\_show.asp?type=&UidA=1006&UidB=1048&id=3682](http://www.cggc.cn/news_show.asp?type=&UidA=1006&UidB=1048&id=3682)

## OIL & NATURAL GAS

### ARAKAN STATE

PetroChina has conducted exploration in some offshore regions of Arakan State.

China Oilfield Services Limited (COSL), a subsidiary of China National Offshore Oil Co. (CNOOC), signed a US\$ 46 million contract for offshore exploration at one of Daewoo's locations.<sup>1</sup> Reports from January 2007 claim that drilling has begun.<sup>2</sup>

#### **A-1 Block (Offshore)**

China National Petroleum Co. (CNPC) and Hong Kong-based subsidiary PetroChina signed an MoU with Myanmar Oil & Gas Enterprise for the purchase of natural gas in late 2005.<sup>3</sup> CNPC has a 60% stake in the deal and PetroChina has a 40% stake.<sup>4</sup>

China National Petroleum Co. (CNPC) reports that China National Offshore Oil Co. (CNOOC) subsidiary China Oilfield Services Limited (COSL) signed an agreement with Burma for offshore oil services in 2005, and obtained two production shares following competition with Thai PTT and India's ONGC Videsh.<sup>5</sup> COSL reports that in November 2005 it secured a 60 day US\$ 6 million contract with Daewoo to provide drilling services with its NHII ship.<sup>6</sup>

#### **A-3 Block (Offshore)**

China National Petroleum Co. (CNPC) and Hong Kong-based subsidiary PetroChina signed an MoU with Myanmar Oil & Gas Enterprise for the purchase of natural gas in late 2005.<sup>7</sup> CNPC has a 60% stake in the deal and PetroChina has a 40% stake.<sup>8</sup>

#### **A-4 Block (Offshore)**

A Sino-Singaporean consortium created by China National Offshore Oil Co. (CNOOC) Myanmar, China Huanqiu Contracting & Engineering Co., and Golden Aaron Pte. signed a production sharing contract for natural gas exploration with Burma in 2004.<sup>9</sup> In February 2008, CNOOC reported it will exchange its C-1 and A-4 blocks for Thai PTT's 20% control of the M-3 and M-4 blocks.<sup>10</sup>

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<sup>1</sup> 'COSL Signs New Drilling Contracts in Myanmar & Australia.' *COSL Website*, 24 November 2005.

<http://210.77.145.59/servlet/Node?Node=35271&Language=0>

<sup>2</sup> 'Less than Expected Reserves in OVL's IRNA.' *Iranian News Agency Distributed by UPI*, 17 January 2007.

<sup>3</sup> 'PetroChina Seeks Myanmar Gas Deal.' *Myanmar Times*, 16 January 2006.

<sup>4</sup> 'China Replaces India in Deal for Shwe Gas.' *Shwe Gas Bulletin Vol.1 Issue 9.*, December 2005.

<http://burmalibrary.org/docs3/SGB01-09.pdf>

<sup>5</sup> '中缅能源管道将进入建设阶段 年输一千万吨石油 (Sino-Burmese Energy Pipelines Enter New Phase).' *CNPC Website*, 3 April 2007.

<http://www.cnpc.com.cn/CNPC/xwzx/hyxx/%e4%b8%ad%e7%bc%85%e8%83%bd%e6%ba%90%e7%ae%a1%e9%81%93%e5%b0%86%e8%bf%9b%e5%85%a5%e5%bb%ba%e8%ae%be%e9%98%b6%e6%ae%b5%20%e5%b9%b4%e8%be%93%e4%b8%80%e5%8d%83%e4%b8%87%e5%90%a8%e7%9f%b3%e6%b2%b9.htm>

<sup>6</sup> 'COSL Signs New Drilling Contracts in Myanmar & Australia.' *COSL Website*, 23 November 2005.

<http://www.iprogilvy.com/NewsReleaseFile/23-11-05.pdf>

<sup>7</sup> '印竞逐缅甸天然气采购权 (China & India Compete for Burma Natural Gas Rights).' *China Land & Resources News*, 16 March 2007. <http://www.clr.cn/front/chinaResource/read/news-info4.asp?ID=109029>

<sup>8</sup> 'China Replaces India in Deal for Shwe Gas.' *Shwe Gas Bulletin Vol.1 Issue 9.*, December 2005.

<http://burmalibrary.org/docs3/SGB01-09.pdf>

<sup>9</sup> 'China Ups Myanmar Acreage.' *International Oil Daily*, 17 December 2004.

<sup>10</sup> 'Thailand PTTEP in Deal with CNOOC in Myanmar.' *Reuters*, 13 February 2007.

<http://www.reuters.com/article/rbssEnergyNews/idUSBKK2053820080213?rpc=401&>

#### **AD-1 Block (Offshore, Shallow Water approx. 200m)**

China National Petroleum Co. (CNPC) International signed exploration and production sharing contracts with Burma's Ministry of Energy in January 2007, three days after China vetoed a UN Security Council resolution to increase pressure on Burma.<sup>11</sup> CNPC owns 100% of this natural gas block and will conduct seismic surveying.<sup>12</sup>

China National Oil & Gas Exploration & Development Co. (CNODC) signed a contract with Myanmar Oil & Gas Enterprise (MOGE) in January 2007 for the exploration of this natural gas block.<sup>13</sup>

#### **AD-6 Block (Offshore, Deep Water approx. 2000m)**

China National Petroleum Co. (CNPC) International signed exploration and production sharing contracts with Burma's Ministry of Energy in January 2007, three days after China vetoed a UN Security Council resolution to increase pressure on Burma.<sup>14</sup> CNPC owns 100% of this natural gas block and will conduct seismic surveying.<sup>15</sup>

China National Oil & Gas Exploration & Development Co. (CNODC) signed a contract with Myanmar Oil & Gas Enterprise (MOGE) in January 2007 for the exploration of this natural gas block.<sup>16</sup>

#### **AD-8 Block (Offshore, Deep Water approx. 2000m)**

China National Petroleum Co. (CNPC) International signed exploration and production sharing contracts with Burma's Ministry of Energy in January 2007, three days after China vetoed a UN Security Council resolution to increase pressure on Burma.<sup>17</sup> CNPC owns 100% of this natural gas block and will conduct seismic surveying.<sup>18</sup>

China National Oil & Gas Exploration & Development Co. (CNODC) signed a contract with Myanmar Oil & Gas Enterprise (MOGE) in January 2007 for the exploration of this natural gas block.<sup>19</sup>

#### **L Block (Onshore)**

China National Petroleum Co. (CNPC) Sichuan Petroleum Geophysical Prospecting Co. won a bid from India's ESSAR to conduct 3-D seismic testing on 300 km<sup>2</sup> at this natural gas block.<sup>20</sup>

#### **M Block (Onshore, Kyaungphyu Region)**

China National Petroleum Co. (CNPC) Sichuan Petroleum Geophysical Prospecting Co. and China National Offshore Oil Co. (CNOOC) conducted 2D seismic testing at Ramree Island in 2005.<sup>21</sup>

China Oilfield Services Limited signed a RMB 40 million contract with CNOOC Myanmar in January 2006 for pre-drilling, drilling fluid & cementing at two wells in this block.<sup>22</sup>

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<sup>11</sup> 'China Signs 3 Deals in Myanmar, Defying Western Pressure.' *International Oil Daily*, 18 January 2007; & 'CNPC Signs Oil & Gas Contracts with Myanmar.' *CNPC Website*, 17 January 2007.

<http://www.cnpc.com.cn/eng/press/newsreleases/CNPCsignsoilandgascontractswithMyanmar.htm>

<sup>12</sup> Ibid.

<sup>13</sup> Ibid.

<sup>14</sup> Ibid.

<sup>15</sup> Ibid.

<sup>16</sup> Ibid.

<sup>17</sup> Ibid.

<sup>18</sup> Ibid.

<sup>19</sup> Ibid.

<sup>20</sup> '缅甸 L 区块, 勘探川军迈步越 (Burma's L Block, Prospects Advance).' *CNPC Sichuan Petroleum Geophysical Prospecting Co. Website*, 19 July 2007. [http://www.sgc-prc.com/news\\_detail.aspx?id=489&cate\\_id=1](http://www.sgc-prc.com/news_detail.aspx?id=489&cate_id=1)

<sup>21</sup> '四川物探与中海油缅甸公司再度握手 (CNPC Sichuan Petroleum Geophysical Prospecting Co. & CNOOC Cooperate Again in Burma).' *CNPC Sichuan Petroleum Geophysical Prospecting Co. Website*, 1 December 2005. [http://www.sgc-prc.com/news\\_detail.aspx?id=148&cate\\_id=1](http://www.sgc-prc.com/news_detail.aspx?id=148&cate_id=1)

<sup>22</sup> 'COSL Secured New Overseas Well Service Contracts in Myanmar.' *COSL Website*, 16 January 2006. <http://www.iprogilvy.com/NewsReleaseFile/16-01-06.pdf>; & 'HK-Listed China Oilfield Wins CNY 40 Million Well Service Contracts in Myanmar.' *AFX News Limited*, 17 January 2006.

The Sino-Singaporean consortium created by China National Offshore Oil Co. (CNOOC) Myanmar, China Huanqiu Contracting & Engineering Co., and Golden Aaron Pte. signed a 20 year production sharing contract with Myanma Oil & Gas Enterprise in October 2004.<sup>23</sup>

## **MANDALAY DIVISION**

### **Bagan Project (Onshore)**

Chinnery Assets was created on 16 November 2001 when China National Petroleum Co. (CNPC) Hong Kong and parent CNPC International entered into a shareholders' agreement, with both parties holding 50% of shares.<sup>24</sup> That same day, Chinnery Assets signed an agreement with Canada's TG World to acquire a 70% interest in three production sharing contracts at the Bagan Project, which includes blocks IOR-3, RSF-2 and RSF-3, worth US\$ 900,000.<sup>25</sup> CNPC Hong Kong's 2002 Annual Report describes an initial investment of HK\$ 5,070,000 for these production sharing contracts, while the 2007 Annual Report claims that the group decided to abandon the blocks after exploration revealed limited commercial reserves, and the exploration investment of HK\$ 6,355,000 in these blocks was included as impairment loss on loans to jointly controlled entities<sup>26</sup>.

### **IOR-3 Block (Onshore, Tetma)**

Chinnery Assets controls 70% of the production sharing contract for this 481 km<sup>2</sup> partially developed oilfield with an estimated reserve of 1.91 million barrels, a quantity based on seismic testing conducted by the geology research center of China National Oil & Gas Exploration & Development Co. (CNODC).<sup>27</sup> In June 2007, a CNPC Hong Kong spokesperson suggested the possibility of abandoning this block, which was later confirmed by the 2007 Annual Report.<sup>28</sup>

### **RSF-2 Block (Onshore, Tuyintaung)**

Chinnery Assets controls 70% of the production sharing contract at this 1,050 km<sup>2</sup> area with an estimated reserve of 216.6 million barrels, a quantity based on seismic testing conducted by the geology research center of China National Oil & Gas Exploration & Development Co. (CNODC).<sup>29</sup> The research phases are complete, and preliminary surveying was conducted<sup>30</sup>. In June 2007, a CNPC Hong Kong spokesperson suggested the possibility of abandoning this block, which was later confirmed by the 2007 Annual Report.<sup>31</sup>

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<sup>23</sup> 'China Ups Myanmar Acreage.' *International Oil Daily*, December 17, 2004.

<sup>24</sup> CNPC Hong Kong 2002. *CNPC Hong Kong 2001 Annual Report*. Available at <http://www.cnpc.com.hk/report/2001cncp-e.pdf>

<sup>25</sup> 'CNPC/Parent Company Set Up JV Unit to Participate in Myanmar Oil Fields.' *AFX News*, 18 November 2001. [http://www.ituc-csi.org/spip.php?action=info\\_compburma&comp=318&lang=en](http://www.ituc-csi.org/spip.php?action=info_compburma&comp=318&lang=en); & 'CNPC (Hong Kong) Limited Announcement of Results.' *CNPC Hong Kong Website*, 22 April 2002. <http://www.cnpc.com.hk/report/report-20020422.pdf>

<sup>26</sup> CNPC Hong Kong 2003. *CNPC Hong Kong 2002 Annual Report*. Available at <http://www.cnpc.com.hk/report/report-20030419.pdf>; & CNPC Hong Kong 2008. *CNPC Hong Kong 2007 Annual Report*. Available at [http://www.cnpc.com.hk/report/2007Annualreport\(e\).pdf](http://www.cnpc.com.hk/report/2007Annualreport(e).pdf)

<sup>27</sup> 'Shareholder's Agreement with CNPC International Limited & Farmout Agreement & Joint Operating Agreement with TG World Energy (Bahamas) Regarding & Oilfield & Exploration Areas in the Union of Myanmar.' *CNPC Hong Kong Website*, 16 November 2001. [http://www.cnpc.com.hk/report/report-20011116\(e\).pdf](http://www.cnpc.com.hk/report/report-20011116(e).pdf)

<sup>28</sup> 'CNPC Hong Kong Outlines Upstream Spending in SE Asia & Peru.' *International Oil Daily*, 14 June 2007; & CNPC Hong Kong 2008. *CNPC Hong Kong 2007 Annual Report*. Available at [http://www.cnpc.com.hk/report/2007Annualreport\(e\).pdf](http://www.cnpc.com.hk/report/2007Annualreport(e).pdf)

<sup>29</sup> 'Shareholder's Agreement with CNPC International Limited (Connected Transaction) & Farmout Agreement & Joint Operating Agreement with TG World Energy (Bahamas) Regarding & Oilfield & Exploration Areas in the Union of Myanmar.' *CNPC Hong Kong Website*, 16 November 2001. [http://www.cnpc.com.hk/report/report-20011116\(e\).pdf](http://www.cnpc.com.hk/report/report-20011116(e).pdf); & 'CNPC Hong Kong Outlines Upstream Spending in SE Asia & Peru.' *International Oil Daily*, 14 June 2007; & '中国石油集团在缅甸 (CNPC in Burma).' *CNPC Website*. <http://www.cnpc.com.cn/CNPC/ywycp/cnpczqq/亚洲.htm>

<sup>30</sup> '中国石油集团在缅甸 (CNPC in Burma).' *CNPC Website*. <http://www.cnpc.com.cn/CNPC/ywycp/cnpczqq/亚洲.htm>

<sup>31</sup> CNPC Hong Kong 2008. *CNPC Hong Kong 2007 Annual Report*. Available at [http://www.cnpc.com.hk/report/2007Annualreport\(e\).pdf](http://www.cnpc.com.hk/report/2007Annualreport(e).pdf)

### **RSF-3 Block (Onshore, Gwegyo-Ngashandaung)**

Chinnery Assets controls 70% of the production sharing contract for this 1,603 km<sup>2</sup> exploration area with an estimated reserve of 288.2 million barrels, a quantity based on seismic testing conducted by the geology research center of China National Oil & Gas Exploration & Development Co. (CNOOC).<sup>32</sup> The research phases are complete, and preliminary surveying has commenced<sup>33</sup>; however, in June 2007, a CNPC Hong Kong spokesperson suggested the possibility of abandoning this block, which was later confirmed by the 2007 Annual Report.<sup>34</sup>

## **MOATTAMA COAST**

### **M-2 Block (Offshore)**

The Sino-Singaporean consortium created by China National Offshore Oil Co. (CNOOC) Myanmar, China Huanqiu Contracting & Engineering Co., and Golden Aaron Pte., signed an exploration and production sharing contract with the Myanmar Oil & Gas Enterprise in early 2005 for this 9,600 km<sup>2</sup> natural gas block.<sup>35</sup>

China National Offshore Oil Co. (CNOOC) Myanmar signed an agreement with Myanmar Oil & Gas Enterprise for exploration of this natural gas block.<sup>36</sup>

### **M-3 Block (Offshore)**

China National Offshore Oil Co. (CNOOC) plans to receive a 20% stake in this block controlled by Thai PTT Exploration & Production in exchange for CNOOC's A-4 and C-1 blocks.<sup>37</sup>

### **M-4 Block (Offshore)**

China National Offshore Oil Co. (CNOOC) plans to receive a 20% stake in this block controlled by Thailand's PTT Exploration & Production in exchange for CNOOC's A-4 and C-1 blocks.<sup>38</sup>

### **M-10 Block (Offshore)**

The Sino-Singaporean consortium created by China National Offshore Oil Co. (CNOOC) Myanmar, China Huanqiu Contracting & Engineering Co., and Golden Aaron Pte., signed an MoU for exploration and a production sharing contract for this 15,534 km<sup>2</sup> natural gas block.<sup>39</sup>

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<sup>32</sup> 'Shareholder's Agreement with CNPC International Limited (Connected Transaction) & Farmout Agreement & Joint Operating Agreement with TG World Energy (Bahamas) Regarding Oilfield & Exploration Areas in the Union of Myanmar.' *CNPC Hong Kong Website*, 16 November 2001. [http://www.cnpc.com.hk/report/report-20011116\(e\).pdf](http://www.cnpc.com.hk/report/report-20011116(e).pdf); 'CNPC Hong Kong Outlines Upstream Spending in SE Asia & Peru.' *International Oil Daily*, 14 June 2007; & '中国石油集团在缅甸 (CNPC in Burma).' *CNPC Website*.

<http://www.cnpc.com.cn/CNPC/ywycp/cnpczqq/亚洲.htm>

<sup>33</sup> 'CNPC Hong Kong Outlines Upstream Spending in SE Asia & Peru.' *International Oil Daily*, 14 June 2007; & '中国石油集团在缅甸 (CNPC in Burma).' *CNPC Website*. <http://www.cnpc.com.cn/CNPC/ywycp/cnpczqq/亚洲.htm>

<sup>34</sup> *IBID*; & CNPC Hong Kong 2008. *CNPC Hong Kong 2007 Annual Report*. Available at [http://www.cnpc.com.hk/report/2007Annualreport\(e\).pdf](http://www.cnpc.com.hk/report/2007Annualreport(e).pdf)

<sup>35</sup> '中海油拿下缅甸 3 个油气区块 (CNOOC Secures 3 Burmese Oil & Gas Blocks).' *CNOOC Website*, 27 January 2005. <http://www.cnooc.com.cn/zhyww/xwygg/210729.shtml>; & '中缅签署 3 个油气区块合同 (China & Burma Sign Contracts for 3 Oil & Gas Blocks).' *CNOOC Website*, 31 January 2005.

<http://www.cnooc.com.cn/zhyww/xwygg/211931.shtml>

<sup>36</sup> 'Production Sharing Contract Inked.' *The New Light of Myanmar*, 27 January 2005. <http://www.myanmar-information.net/infosheet/2005/050127.htm>

<sup>37</sup> 'Thailand PTTEP in Deal with CNOOC in Myanmar.' *Reuters*, 13 February 2007. <http://www.reuters.com/article/rbbsEnergyNews/idUSBKK2053820080213?rpc=401&>

<sup>38</sup> *Ibid*.

<sup>39</sup> 'China Ups Myanmar Acreage.' *International Oil Daily*, 17 December 2004.



## **PEGU DIVISION**

### **Pyay Oilfield**

In May of 2006, China National Petroleum Co. (CNPC) Huabei Petroleum and China National Oil & Gas Exploration & Development Co. (CNODC) affiliated Kai Er Co. signed well drilling service contracts worth RMB 60 million for the Pyay Oilfield.<sup>40</sup> Following initial failures in 2004, due to unfamiliarity with local conditions, Well Drilling No. 4 Company Team No. 40511 successfully completed the KYTC-1 and KNC-1 wells in 2006.<sup>41</sup>

### **IOR-4 Block (Onshore)**

China National Petroleum Co. (CNPC) has a 100% holding of this block through a contract with the Ministry of Energy.<sup>42</sup> CNPC reports that preliminary drilling at the PSC-1 well at the IOR-4 block yielded remarkable results.<sup>43</sup> In July 2006, the PSC-101 well was extended from 1200 m to 1960 m following work completed by CNPC Huabei affiliated Drilling No. 4 Company Team No. 40511.<sup>44</sup>

## **SAGAING DIVISION**

### **C-1 Block (Onshore, Indaw-Yenan)**

A consortium created by China National Offshore Oil Co. (CNOOC) Myanmar., China Huanqiu Contracting & Engineering Co., and Singapore's Golden Aaron Pte., signed an exploration and production sharing contract with the Myanmar Oil & Gas Enterprise (MOGE) in early 2005 for this 17,000 km<sup>2</sup> natural gas block.<sup>45</sup>

China National Petroleum Co. (CNPC) Sichuan Petroleum Geophysical Prospecting Co. and MOGE signed and completed a contract for 2D seismic surveying with China National Offshore Oil Co. (CNOOC) Myanmar by May 2007.<sup>46</sup> In February 2008, CNOOC reported it will exchange its C-1 and A-4 blocks for Thai PTT's 20 % control of M-3 and M-4 blocks.<sup>47</sup>

### **C-2 Block (Onshore, Shwebo-Monywa)**

The Sino-Singaporean consortium created by China National Offshore Oil Co. (CNOOC) Myanmar, China Huanqiu Contracting & Engineering Co., and Golden Aaron Pte., signed an exploration and production sharing contract with the Myanmar Oil & Gas Enterprise in early 2005 for this 26,000 km<sup>2</sup> natural gas block.<sup>48</sup>

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<sup>40</sup> '华北石油管理局缅甸市场淘金 (CNPC Huabei Petroleum Pans Burmese Market).' *CNPC Website*, 24 May 2006. <http://www.cnpc.com.cn/CNPC/xwzx/qydt/%e5%8d%8e%e5%8c%97%e7%9f%b3%e6%b2%b9%e7%ae%a1%e7%90%86%e5%b1%80%e7%bc%85%e7%94%b8%e5%b8%82%e5%9c%ba%e6%b7%98%e9%87%91.htm>

<sup>41</sup> Ibid.

<sup>42</sup> 'CNPC in Myanmar.' *CNPC Website*. <http://www.cnpc.com.cn/eng/cnpcworldwide/asiaandpacific/Burma/>

<sup>43</sup> '国家概况 (CNPC Myanmar Profile).' *CNPC Website*. <http://www.cnpc.com.cn/cnadc/hzygy/zygxx/zfjs/md.htm>

<sup>44</sup> '中南半岛亮出中国石油“名片” (图) (Southeastern Peninsula Brightens CNPC's Brand Name).' *CNPC Website*, 13 November 2006. <http://www.cnpc.com.cn/Paper/2006/11/13/plate6/005.htm>

<sup>45</sup> '中海油拿下缅甸 3 个油气区块 (CNOOC Secures 3 Burmese Oil & Gas Blocks).' *CNOOC Website*, 27 January 2005. <http://www.cnooc.com.cn/zhyww/xwygg/210729.shtml>; & '中缅签署 3 个油气区块合同 (China & Burma Sign Contracts for 3 Oil & Gas Blocks).' *CNOOC Website*, 31 January 2005. <http://www.cnooc.com.cn/zhyww/xwygg/211931.shtml>

<sup>46</sup> 'Production Sharing Contract Inked.' *The New Light of Myanmar*, 27 January 2005. <http://www.myanmar-information.net/infosheet/2005/050127.htm>; & '四川物探缅甸 C1 区块项目完工 (CNPC Sichuan Exploration of Burma's C1 Block Complete).' *CNPC Website*, 14 May 2007. <http://www.cnpc.com.cn/Paper/2007/05/14/plate6/003.htm>

<sup>47</sup> 'Thailand PTTEP in Deal with CNOOC in Myanmar.' *Reuters*, 13 February 2007. <http://www.reuters.com/article/rbssEnergyNews/idUSBKK2053820080213?rpc=401&>

<sup>48</sup> '中海油拿下缅甸 3 个油气区块 (CNOOC Secures 3 Burmese Oil & Gas Blocks).' *CNOOC Website*, 27 January 2005. <http://www.cnooc.com.cn/zhyww/xwygg/210729.shtml>; & '中缅签署 3 个油气区块合同 (China & Burma Sign Contracts for 3 Oil & Gas Blocks).' *CNOOC Website*, 31 January 2005. <http://www.cnooc.com.cn/zhyww/xwygg/211931.shtml>



China National Petroleum Co. (CNPC) Sichuan Petroleum Geophysical Prospecting Co. was chosen by China National Offshore Oil Co. (CNOOC) Myanmar in November 2005 to conduct seismic surveying at this block.<sup>49</sup>

China National Offshore Oil Co. (CNOOC) Myanmar signed an agreement with Myanmar Oil & Gas Enterprise for exploration of this natural gas block.<sup>50</sup>

#### **D Block (Onshore, Sagaing & Magwe Divisions)**

Sinopec planned to drill an exploration well at this 4,763 mile<sup>2</sup> oil block in June 2007.<sup>51</sup>

#### **OIL & GAS PIPELINES**

Sinopec has signed a RMB 8 billion contract for the construction of a 2,380 km long oil pipeline between Sittwe and Kunming.<sup>52</sup> In April 2007, China's National Reform & Development Council approved the construction of a pipeline to bring oil from the Middle East and Africa to China, and avoid the Straits of Malacca.<sup>53</sup> China will also provide Burma with a US\$ 83 million loan to develop its oil resources.<sup>54</sup>

PetroChina, with subsidiary ChinaOil Singapore, is negotiating for the construction of a pipeline capable of carrying 170 billion m<sup>3</sup> of natural gas between Burma's Arakan State and Chongqing.<sup>55</sup> A news report from April 2007 indicates that PetroChina has reached an initial agreement with Myanmar Oil & Gas Enterprise (MOGE) for the construction of two parallel natural gas and oil pipelines linking the Arakan Coast with Kunming and/or Chongqing.<sup>56</sup>

China National Petroleum Co. (CNPC) surveyed sites in Arakan State in January 2007 for the construction of parallel oil and natural gas pipelines.<sup>57</sup> In December 2007, CNPC signed a strategic agreement with Yunnan for cooperation on the development of an oil pipeline from Burma.<sup>58</sup>

Nonetheless, the current status of both the oil and natural gas pipelines remains unclear as conflicting reports continue to appear in Chinese and English media. Huang Qifan, Mayor of Chongqing, has been building hype in Chinese media about decisions from high level officials in the Chinese

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<sup>49</sup> '四川物探与中海油缅甸公司再度握手 (CNPC Sichuan Petroleum Geophysical Prospecting Co. & CNOOC Cooperate Again in Burma).' *CNPC Sichuan Petroleum Geophysical Prospecting Co. Website*, 1 December 2005. [http://www.sgc-prc.com/news\\_detail.aspx?id=148&cate\\_id=1](http://www.sgc-prc.com/news_detail.aspx?id=148&cate_id=1)

<sup>50</sup> 'Production Sharing Contract Inked.' *The New Light of Myanmar*, 27 January 2005. <http://www.myanmar-information.net/infosheet/2005/050127.htm>

<sup>51</sup> 'Sinopec to Drill for Oil in June.' *Myanmar Times*, 28 May 2007.

<sup>52</sup> 'Work on Oil Pipeline Expected to Start this Year.' *The Myanmar Times*, 20 April 2007. <http://www.mmtimes.com/no364/b004.htm>; & 'Sinopec Construction of China-Burma Oil Pipeline to Start in 2007.' *Xinhua via Comtex*, 21 April 2007.

<http://www.zibb.com/article/811631/Sinopec+says+construction+of+ChinaBurma+oil+pipeline+to+start+in+2007/>

<sup>53</sup> 'Sino-Burma Pipeline Receives NDRC Approval.' *China Energy Weekly*, 25 April 2007.

<sup>54</sup> 'Work on China-Myanmar Oil Pipeline to Start in 2007.' *Asia Today*, 23 April 2007.

<http://www.antara.co.id/en/arc/2007/4/23/work-on-china-myanmar-oil-pipeline-to-start-in-2007/>

<sup>55</sup> 'China Hands Burma to Build Parallel Energy Pipelines.' *Comtex*, 5 April 2007; & 'Natural Gas Business.' *ChinaOil Website*. [http://www.chinaoil.com.cn/zly\\_en/zgs/detail.asp?id=414&sid=0](http://www.chinaoil.com.cn/zly_en/zgs/detail.asp?id=414&sid=0)

<sup>56</sup> 'Sino-Burmese Energy Pipeline to Begin Construction.' *People's Daily*, 3 April 2007. <http://finance.people.com.cn/GB/1038/59942/59955/5556045.html>,

<sup>57</sup> '中缅油气管道将使中缅两国联系更加紧密 (Sino-Burmese Pipeline Brings China & Burma Even Closer).' *CNPC Website*, 28 February 2007.

<http://www.cnpc.com.cn/CNPC/xwzx/hyxx/%e4%b8%ad%e7%bc%85%e6%b2%b9%e6%b0%94%e7%ae%a1%e9%81%93%e5%b0%86%e4%bd%bf%e4%b8%ad%e7%bc%85%e4%b8%a4%e5%9b%bd%e8%81%94%e7%b3%bb%e6%9b%b4%e5%8a%a0%e7%b4%a7%e5%af%86.htm>

<sup>58</sup> 'CNPC Speeds Up Preparations for Myanmar-China Oil Pipeline.' *Dow Jones*, 2 December 2007.

<http://www.nasdaq.com/aspxcontent/NewsStory.aspx?cpath=20071202%5cACQDJON200712022231DOWJONESDJONLINE000386.htm&>

government and CNPC to extend the Sino-Burmese oil pipeline to Chongqing.<sup>59</sup> In January 2007, Huang Qifan announced a campaign to raise CNY 100 billion for the development of Chongqing's petrochemical industry to accommodate oil from the Sino-Burmese pipeline. In June 2007, CNPC signed an agreement with Chongqing to cooperate on the development of the city's petrochemical industry and increase the supply of oil and natural gas.<sup>60</sup>

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<sup>59</sup> '中缅石油管线年内动工昆明将建炼油厂 (Sino-Burmese Pipeline Construction to Begin this Year).' *CNPC Website*, 4 April 2007.

<http://www.cnpc.com.cn/gdj/gdxw/%e4%b8%ad%e7%bc%85%e7%9f%b3%e6%b2%b9%e7%ae%a1%e7%ba%bf%e5%b9%b4%e5%86%85%e5%8a%a8%e5%b7%a5%e6%98%86%e6%98%8e%e5%b0%86%e5%bb%ba%e7%82%bc%e6%b2%b9%e5%8e%82.htm>; & '中缅输油管线或年内开建-重庆坐望千万吨原油 (Construction of Sino-Burmese Pipeline to Chongqing to Start Next Year).' *People's Daily*, 26 March 2007.

<http://finance.people.com.cn/GB/1038/59942/59955/5518259.html>

<sup>60</sup> 'CNPC Signs Strategic Cooperation Agreement with Chongqing.' *CNPC Website*, 27 June 2007.

[http://www.cnpc.com.cn/eng/press/newsreleases/\\_CNPCsignsstrategiccooperationagreementwithChongqing\\_.htm](http://www.cnpc.com.cn/eng/press/newsreleases/_CNPCsignsstrategiccooperationagreementwithChongqing_.htm)

## MINING

### CHIN STATE

#### **Mwetaung Nickel Deposit**

Kingbao (Jinbao) Mining Co. signed agreements with the Ministry of Mining No. 3 to conduct exploration and feasibility studies<sup>1</sup> to explore this laterite nickel mine that contains proven nickel reserves in excess of 10 million tons at an average grade of 1.5%.<sup>2</sup> Jinbao (Kingbao) Mining Co. is a 50/50 joint venture created in 2005 by Gold Mountain (Hong Kong) International Mining Co., a wholly-owned subsidiary of Zijin Mining Co., and Wanbao Mining Co., a wholly-owned subsidiary of China North Industries (NORINCO).<sup>3</sup>

### SAGAING DIVISION

#### **Letpadaung Copper Deposit (Monywa)**

According to news reports from 2006, China Nonferrous Metal Mining Co. owns the mine.<sup>4</sup>

### SHAN STATE

#### **Tigyit Coal Fired Power Plans and Mine (120 MW) (Tigyit, Pin Laung Township)**

China National Heavy Machinery Co. (CHMC) signed a US\$ 42.9 million contract with the Ministry of Electric Power in August 2001.<sup>5</sup> In March 2004, the third and final shipment of equipment from CHMC arrived in Burma, including belt conveyors, crushers, etc. at a value of US\$ 5 million.<sup>6</sup> The Final Acceptance Certificate has been signed, and the plant is in operation, with a conveyor belt transporting coal from the mine to the power plant.<sup>7</sup>

#### **Namtu-Bawtwin Mineral Deposit**

Yunnan Machinery & Equipment Import & Export Co. (YMEC) has been awarded the mining and operation rights to reclaim lead and zinc from the tailings at Namtu by Burma's Ministry of Mines.<sup>8</sup> YMEC has invested US\$ 5 million for a 500 ton per day concentrating mill, which is expected to come online in late 2008, and plans to invest an additional US\$ 50 million for the development of an 8 million ton per year open pit mine in the near future.<sup>9</sup>

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<sup>1</sup> 'China, Myanmar Sign Mineral Exploration Agreement.' *Asia Pulse Pte.*, 15 August 2005.

<sup>2</sup> 'Zijin Mining Expands Overseas Mining.' *Interfax China*, 17 April 2007.

<http://www.minesandcommunities.org/Action/press1451.htm>; & 'Zijin to Double Gold Output after 68pc Profit Jump.' *South China Morning Post*, 31 March 2006.

<sup>3</sup> 'Jinbao Mining Company Limited.' *Zijin Mining Website*, 19 July 2007.

<http://english.zjky.cn/Colla/view.asp?id=55>

<sup>4</sup> 'CN Acquires Largest Copper Mine in Northeastern China.' *China Business News Online*, 2 March 2006.

<sup>5</sup> Platts. 2007. *Platts Myanmar Country Energy Profile*. [Thanks to Courier Research Associates for providing this document.]

<sup>6</sup> 'More Equipment Arrived for Shan State Coal Mine.' *The Myanmar Times*, 5 April 2004.

<http://www.myanmar.gov.mm/myanmartimes/no2111/MyanmarTimes11-211/012.htm>

<sup>7</sup> '缅甸 TIGYIT 燃煤电站项目通过最终验收 (Burma's Tigyit Coal Generator Plant Project Passes Final Inspection).' *CHMC Website*, 2 February 2007. <http://www.chmc2003.net/news.do?cmd=show&id=1611>; '缅甸 TIGYIT 电厂 2#机组调式工作全面展开 (Burma's Tigyit Power Plant generator No. 2).' *CHMC Website*, 24 March 2005. <http://www.chmc2003.net/news.do?cmd=show&id=1166>; & '中国重机公司总承包的缅甸 TIGYIT 电站 2#机组并网发电 (CHMC's Burma Tigyit Power Plant #2 Generator Produces Electricity).' *CHMC Website*, 17 May 2005. <http://www.chmc2003.net/news.do?cmd=show&id=1197>

<sup>8</sup> 'Development Projects of Namtu-Bawtwin Mineral Deposit in the Union of Myanmar.' *YMEC Website*. <http://www.ymec.com.cn/en/mining.htm> [Thanks to Burma Relief Center for providing this link.]

<sup>9</sup> 'Development Projects of Namtu-Bawtwin Mineral Deposit in the Union of Myanmar.' *YMEC Website*. <http://www.ymec.com.cn/en/mining.htm> [Thanks to Burma Relief Center for providing this link.]

## **MANDALAY DIVISION**

### **Tagaung Taung Nickel Deposit (Thabeikkyin Township)**

China Nonferrous Metal Mining Co. (CNMC) signed an agreement with the Ministry of Mining in July 2004 to conduct exploration and a feasibility study at this ferrous nickel deposit.<sup>10</sup> In 2007 China's National Reform and Development Council approved this project, under which CNMC would control 75%, while Burma's Mining Enterprise No. 3 would control the remaining 25%.<sup>11</sup> In June 2007, the feasibility study was completed and approval was granted by the Ministry of Mining<sup>12</sup>. In July 2008, CNMC Nickel Co. and Burma's Mining Enterprise No. 3 signed a new agreement to move forward with this US\$ 800 million project, with both parties having a 50% stake.<sup>13</sup>

China EXIM Bank and the China Development Bank are providing funding, while Canadian-based Hatch and China Nonferrous Engineering & Research Institute will jointly design the project.<sup>14</sup>

### **Mount Popa Pozzolan Mine & Factory**

Jiangsu Pengfei Group Co. signed an agreement with Ministry of Electric Power No. 1 for the construction of a 500 ton per day pozzolan factory.<sup>15</sup>

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<sup>10</sup> 'CNMC & Burma Sign Exploration & Feasibility Study Agreement.' *中国国家企业网*, 22 July 2004.

<http://www.chinabbc.com.cn/yljc/view.asp?newsid=200472213265635&classid=109102104>; & 'Myanmar Mining Annual Review December 2005.' *Mining Annual Review*, December, 2005.

<sup>11</sup> 'CN's Nickel Mine Project Still Awaiting Burmese Government Approval.' *China Metals Weekly via Interfax*, 15 June 2007; & 'CN to Develop Nickel Mine in Burma.' *Interfax*, 25 August 2006.

<sup>12</sup> 'China Nonferrous Metal Group Starts Nickel Project in Burma.' *Sinocast via Comtex News Network*, 29 June 2007.

<sup>13</sup> 'CNMC to kick off construction on Myanmar nickel mine in H2.' *Interfax China Metals and Mining*, 1 August 2008. <http://www.minesandcommunities.org/article.php?a=8738>; & 'Mining Enterprise No. 3 and CNMC Nickel Co. Sign Contract.' *The New Light of Myanmar*, 30 July 2008.

<http://myanmargeneva.org/NLM2008/eng/7July/n080730.pdf>

<sup>14</sup> *IBID*

<sup>15</sup> '缅甸一电部与中国江苏鹏飞集团公司签署日产 500 吨粉煤灰厂合作协定 (Burma No. 1 Ministry of Electric Power & China Sign Pozzolan Agreement).' *The Economic & Commercial Counselor's Office of the Embassy of the People's Republic of China in Myanmar Website*, 15 April 2007.

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