

# **Industry Engagement Program**

**Large Medical Diagnostic Imaging Equipment**

**Market Review and Action Plan**

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The World Bank

1818 H Street NW

Washington DC 20433

Telephone: 202-473-1000

Internet: [www.worldbank.org](http://www.worldbank.org)

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## Market Review Findings

### 1.1 Introduction

The World Bank Board approved a new Procurement Framework in July 2015 to support Bank-financed activities under its Investment Project Financing instrument. As part of its approval, the Board agreed that the Bank should initiate an Industry Engagement Program (IEP) to target industry sectors where there are recurring procurement challenges. The IEP program began in December 2016, and initially targets improving procurements in the Medical Diagnostic Imaging (MDI) sector, and separately in the High Voltage Direct Current Power Distribution sector.

The IEP has been designed to work closely with industry sector experts (both client and supply side) to identify and address recurring procurement challenges in Bank financed projects to achieve improved procurement and development outcomes.

Program objectives are to:

- Motivate the right companies to bid;
- Speed up procurements;
- Improve readiness for project implementation;
- Reduce complaints;
- Reduce costs of bidding (clients and suppliers);
- Achieve Value for Money (VfM) to deliver better outcomes and results;
- Bring greater transparency to the bidding process.

The Large Medical Diagnostic Equipment industry actively participated in the consultations on the Bank's new Procurement Framework providing written comment on proposed changes to the Bank's Procurement Regulations for Borrowers. This included identification of specific procurement issues and initial proposed solutions relating to Large Medical Diagnostic Equipment.

In addition to feedback from industry, the IEP team launched a thorough investigation into the MDI market and sought industry feedback, these inputs inform potential actions and interventions that may be taken by the Bank to improve procurement results. The market review brings together a range of research from various bodies, and seeks to correlate issues to provide a coherent view of the MDI sector. The Bank acknowledges and expresses its thanks to these technical organizations, trade bodies and industry associations for their contributions.

### 1.2 Market Analysis Findings

- Recurring procurement problems in Bank procurement of Large Medical Diagnostic Equipment include bidder challenges to the bid evaluation process and award decisions (53% of complaints), and concerns on biases/weaknesses in specifications and bid documents (25% of complaints);
- The Bank has 45 active projects in its HNP portfolio, 50% of projects are in Europe and Central Asia (ECA) and Africa, in total \$470M of medical equipment procurement is

identifiable. The Bank’s MDI financing is relatively low to the total value of all MDI procurement globally. However, the Banks expenditure data is likely under reported<sup>1</sup> as MDI can be combined into a broader civil engineering project e.g. hospital construction or refurbishment;

- Due to the complexity of the procurement, Bank financed projects usually hire an external consultant to support procurements, the availability of technical MDI consultants is limited, and they can often be accused of biases by the MDI sector;
- The average total cost (purchase, operation and maintenance) over the life of an MRI scanner is circa US\$3.08M, an X-Ray is US\$344k, and an ultrasound is US\$65k;
- The ratio of initial purchase price to O&M is 1:1 for MRI, 1.5:1 for X-Ray and 2:1 for Ultrasound;
- Typically, MDI equipment has a 10-year life span (longer or shorter depending on O&M), the optimal age profile for a set of MDI equipment is that 60% should be less than 5 years old, 30% between 6 to 10 years, and less than 10% over 10 years old. Due to fiscal constraints, the life of equipment is generally being extended, this progressive aging of equipment may lead to a surge in demand following economic growth;
- The MDI market is segmented between Original Equipment Manufacturers (OEM), distributors and sellers of refurbished equipment (latter, with some OEM approved, others not);
- GE (North America), Siemens (Germany), Philips (Netherlands) and Toshiba (Japan) hold between 65% to 90% of MDI OEM market share (MRI, X-Ray, Ultrasound and Nuclear Imaging). Following these, Hitachi (Japan) holds under 10% market share, across multiple product categories, with Shimadzu (China) holding <10% market share in a single product category (X-Ray)<sup>2</sup>;
- GE holds 23% of total MDI market share, with Siemens at 21%, Philips at 18% and Toshiba at 13%<sup>3</sup>;
- The market appears to operate as an oligopoly, substitutions are not evident, but the development of lower cost MDI equipment is being driven by developing markets and the need to penetrate, secure and grow market share. Buyer power is generally low, due to fragmentation. Profitability remains generally high for established OEMs, although high R&D costs impact the bottom line – due to this there are limited opportunities for new entrants;
- The typical business strategy of OEMs is to develop customer relationships through the sale of equipment, then grow the relationship and revenue through O&M, and other services. Some may also seek to “lock-in” clients by offering integrated services, software,

<sup>1</sup> At the time of finalizing this report the Bank financed a major MDI program in Romania, which is not included in the data shown.

<sup>2</sup> Source: *Diagnostic Imaging Market: Global Forecast to 2020, Markets and Markets; Company annual reports*

<sup>3</sup> Source: *Diagnostic Imaging Market: Global Forecast to 2020, Markets and Markets; Company annual reports*

or other equipment that interfaces for increased benefits. This can be summarized, much like other technology companies as a “capture, secure, grow, reap and protect” market strategy;

- Most Bank financed MDI equipment is procured through distributors (usually OEM certified), and is mainly focused on X-Ray equipment procurement. The largest distributors who have been awarded Bank financed procurements are based (rank order) in the Russian Federation, Switzerland, Vietnam, China and Bangladesh;
- The MDI sector is represented by Industry Associations, most notably DITTA and ECRI, both of whom are not-for profit bodies that among other things gather good practice, give sample specifications, analyze and publish market data, and represent the sector. However, compared to other Industry Associations such as FIDIC they have not set any harmonized legal conditions;
- Refurbished MDI equipment varies between 16% to 25%<sup>4</sup> of market share for individual product lines. Procurement of refurbished equipment is most prevalent in North America, however regulatory frameworks in many countries prevent the use of refurbished MDI equipment;
- MDI sector is moving from a supplier of equipment, to a provider of medical care solutions – with a service delivery model being preferred. For example, General Electric reported in 2014/15 that 44%<sup>5</sup> of its Healthcare division revenue came from service delivery – it is logical to assume that other manufacturers have a similar revenue distribution model;
- The MDI industry is therefore concerned that the Bank’s tendency to not finance or support procurement of O&M services is a critical problem that needs resolution;
- The World Health Organization (WHO) observes that 70% of MDI acquired by developing countries will never be used due to a lack of technical capacity and insufficient O&M;
- The global MDI market is valued at US\$24,733M, with annual growth expected to be at least 6% till 2020. The highest levels of growth are forecast in EAP at 7.2%, with X-Ray forecast to grow the highest at 50%. Growth is impacted by increasing patient numbers, aging populations and increased detection of chronic diseases such as cancer, Alzheimer’s, cardiovascular disease etc.<sup>6</sup>;
- Licensing of MDI equipment and regulatory standards at a country level is a critical barrier to entry and can limit competition. Regulatory convergence is progressing through the International Medical Devices Regulatory Forum, but appears somewhat off completion;
- Due to the relatively low expenditure on MDI (as a percentage of the Bank’s IPF instrument), coupled with the high levels of complexity, difficulty to specify and criticality for medical outcomes the procurement is positioned as “Strategic Security” on the supply

<sup>4</sup> Source: *Diagnostic Imaging Market: Global Forecast to 2020, Markets and Markets*

<sup>5</sup> GE Annual report 2015

<sup>6</sup> Source: *Diagnostic Imaging Market: Global Forecast to 2020, Markets and Markets*

positioning matrix (lower value, but high risk) – meaning that the Bank needs to secure effective supply, while not necessarily being able to utilize contract size/value as an incentive lever;

- Reflecting the relatively low value of Bank financed procurement compared to the total MDI market, and the industry feedback that Bank financed procurements can be with unattractive clients in their view (such as low capacity, lack of O&M, lowest purchase price decision-making, poor payment track records etc.) – the supplier preferencing is categorized as “nuisance” (lower value, and unattractive); and
- The misalignment between the Bank’s supply positioning of Strategic Security (high risk procurements that need to succeed), with the markets view of the procurements as a Nuisance is of great concern. The Bank therefore needs to work to increase the attractiveness of its financed MDI procurement to raise the attractiveness to a level where the market treats the procurements as a business development opportunity – meaning they will be more positively engaged and likely to bid.

Reflecting the market analysis, the attractiveness of Bank financed MDI procurements will aim to be increased through interventions as part of the ongoing Industry Engagement Program. See annex 1 for separate action plan.

## Annex 1 - Action Plan to end June 2018

Detailed below are the key actions proposed to begin to address the Bank's procurement challenges in the MDI sector:

- **Establish Expert Panels on specifications:**
  - Develop terms of reference
  - Establish framework panel of experts
- **Establish Framework to support MDI project/procurement implementation:**
  - Develop terms of reference
  - Establish implementation support framework
- **Publish Borrower guidance on “How to Buy Large Diagnostic Medical Equipment” – phased delivery of inputs below**
  - Project design (reflecting outcomes needed)
  - Financing models to support better life cycle decision-making
  - Buy capital, or capital and maintenance, and/or training, or procuring a service solution (clinical need)
  - Risk matrix and possible risk mitigations
  - Model contract risk allocation matrix
  - Different procurement techniques and methods
  - Market dynamics
  - Pre-market engagement and reverse marketing
  - Develop requirements decision making model
  - Project segmentation
  - Lot strategy
  - Specification development
  - Setting evaluation criteria
  - Settings weightings and technical assessment models
  - How to construct a price schedule
  - Determining the best value bidder
  - Establish best practice for warranty, operational, technical, training etc.
- **Produce more detailed guidance on setting appropriate terms and conditions - phase 1 –**
- **Engagement, webinars, communications and workshops –**