

# Great Wall Motor

Mastering materials compliance with ENOVIA V6 and CATIA



## Overview

### ■ Challenge

To diversify into the international market, GWM needed to establish an enterprise-wide compliance platform capable of ensuring adherence to eco-design standards and enhanced product quality.

### ■ Solution

GWM adopted Dassault Systèmes' ENOVIA Materials Compliance Central (MCC) solution to meet European Union environmental regulations and CATIA to enhance design quality.

### ■ Benefits

Using DS PLM solutions, GWM was granted the EU accreditation certificate for four of its models in 2009 and became the first Chinese brand to be officially accredited by the EU.



"ENOVIA MCC enables us to proactively manage all of the reporting and analysis requirements for thousands of parts and the multitude of suppliers involved in the development of our products."

Shuli Li  
Deputy President, GWM



### Largest privately owned automotive manufacturer in China

Great Wall Motor Company Limited (GWM) is a privately owned automaker in China with headquarters in Baoding. With revenues of \$1.2 billion and products sold in more than 120 countries, GWM was China's first private automobile enterprise listed on the Hong Kong Stock Exchange. The company has more than 30 subsidiaries and over 22,000 employees.

Despite the challenges facing the automotive sector, GWM, as the largest commercial pickup and SUV manufacturer in China, wanted to improve its competitive advantage and expand into the international market. Shuli Li, Deputy President, GWM said: "Although the global downturn undermined the automotive market, GWM's commitment to becoming a global player has never changed. To meet this objective, we wanted to start from an even higher benchmark than the

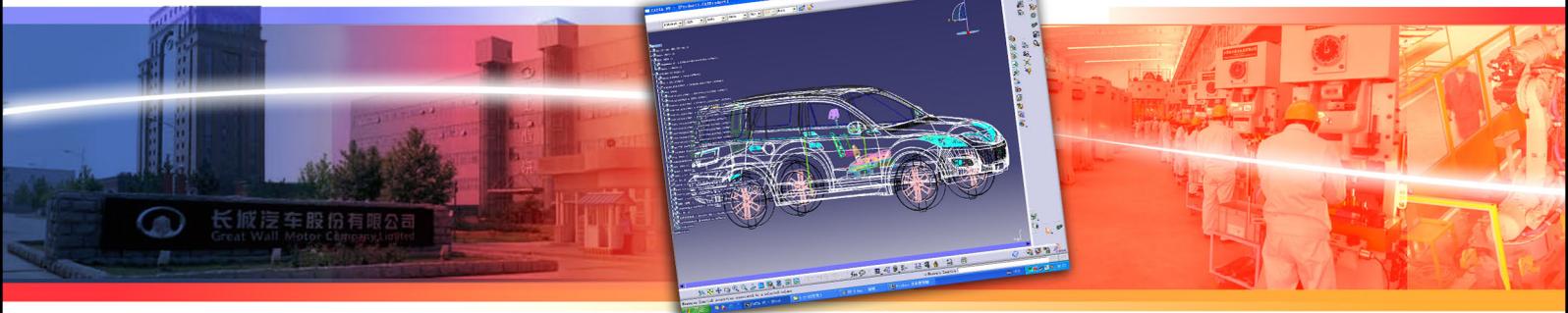
industry's norm. As a result, it's imperative that we not only meet the latest Chinese standards, but the highest international standards."

A cornerstone of this strategy was a PLM solution that would enable GWM to enhance its eco-design to meet the environmental standards and regulations of the European Union (EU). To help them achieve this objective, GWM selected Dassault Systèmes' (DS) Product Lifecycle Management (PLM) solutions.

### Using ENOVIA to achieve eco-design compliancy

In order to gain unrestricted access to the European market, GWM had to meet the EU's Whole Vehicle Type Approval (WVTA) certification. The EU certification consists of 48 testing items, which set high standards for vehicles in areas such as emission levels, safety, and environmental impact.





“Although the global downturn undermined the automotive market, GWM’s commitment to becoming a global player has never changed. To meet this objective, we wanted to start from an even higher benchmark than the industry’s norm. As a result, it’s imperative that we not only meet the latest Chinese standards, but the highest international standards.”

Shuli Li  
Deputy President, GWM

GWM chose ENOVIA Materials Compliance Central (MCC), part of the ENOVIA V6 platform. ENOVIA MCC is a business process application designed to empower companies to adopt proactive environmental compliance strategies throughout a product’s lifecycle, from design to disposal. It provides strong search mechanisms and analytical capabilities to verify whether the materials selected during product development meet the requirements of all relevant regional and global regulations, and also enables enterprises to collect, sort and generate part-level material verification reports and material composition data more easily.

GWM selected the MCC solution to track and report EU environmental compliance with best business practices that include the ability to collect, integrate, analyze and report a product’s environmental compliance from its initial concept through to manufacturing and after-market service. It enabled GWM product compliance

engineers to view material content information in the context of the product bill of materials, and to cross-reference this data against multiple regulations.

Li stated, “ENOVIA MCC enables us to proactively manage all of the reporting and analysis requirements for thousands of parts and the multitude of suppliers involved in the development of our products.”

#### **Rising to the challenge**

Particularly challenging among all the EU testing items is the Reuse, Recycle, Recovery (RRR) certification that governs and monitors the environmental impact of an automobile. It bans the use of materials that contain heavy metals, obliges recycling design, and requires a data collection and monitoring system for all the materials in the supply chain. In order to obtain the RRR certificate, GWM established the End of Life Vehicles (ELV) project team, the first of its kind in China.



Yuchuan Wang, Deputy Director of International Market Promotion Department, GWM said: “ENOVIA ensured that our RRR certification program functioned smoothly. Without it, we wouldn’t have been able to fulfill our goal in such a short time. With ENOVIA, we can collaborate across many departments, including product design, supply chain management, manufacturing, material testing, materials data system development, and laws and regulations management.”

Moreover, in order to make and buy the right components, GWM conducts training to guide suppliers on how to submit material declarations on the ENOVIA platform. GWM’s compliance engineers can initiate and send material declaration requests to suppliers of outsourced components. They can also monitor a supplier’s progress in reporting compliance and review, validate, and accept or reject received material declarations.

Wang said: “MCC gives GWM a central mechanism for producing comprehensive material declarations without consuming valuable engineering resources to duplicate information that has already been gathered elsewhere in the organization.”

#### **Improved design quality with CATIA**

As GWM business continued to expand, the company made a strategic business decision to select CATIA in order to deliver products on time and on budget. GWM uses CATIA to perform virtual design and testing, digital mock up, and digital assembly, and to reduce R&D development cycles.

“With CATIA, we can insert the driver virtually into the digital mock-up of the car,” said Yong Zhang, Chief of Information Management, GWM. “We can then optimize the simulation design to ensure that the driver will fit perfectly and be able to operate the car with maximum safety and comfort.”



“ENOVIA ensured that our RRR certification program functioned smoothly. Without it, we wouldn’t have been able to fulfill our goal in such a short time. With ENOVIA, we can collaborate across many departments, including product design, supply chain management, manufacturing, material testing, materials data system development, and laws and regulations management.”

Yuchuan Wang  
Deputy Director of International Market Promotion Department, GWM

As the deployment of 3D virtual design expanded to more departments, GWM improved the quality of its designs, avoiding mistakes in the earlier phases and reducing costs caused by mistakes. Zhang said: "CATIA 3D data models help us further improve quality design. With CATIA machining capabilities, the 3D models can also be directly used for the production process."

"DS PLM solutions play a key strategic role in helping us bring the innovation process to life. In the past, it would have taken around 20 people working together to simply design a new product. Now, less than ten people are required to complete a product design, which has helped to dramatically shorten the time to market," he said.

#### **GWM awarded EU certificate**

In September 2009, GWM became the first Chinese automaker to receive the EU WVTA accreditation certificate. Four models received the accreditation: Florid, Coolbear, Hover 5, and Wingle 4.

"This certification applies to each product," said Li. "As well as to the production capacity and products management system of the company, which is why it is so difficult to get the certification. Thanks to Dassault Systèmes' assistance in helping us improve the eco-design and shorten the certification process, we finally made it!"

Today, the four WVTA certified models account for more than 30 percent of GWM's overseas sales. Due to its foreign exports, GWM is now ranked first among Chinese auto manufacturers helping to establish the company as the country's recognized leader.

In the future, GWM plans to deploy DELMIA, DS's solutions for digital manufacturing and to expand its PLM footprint across the whole company and throughout the vehicle lifecycle from inception to end-of-life. Li said: "We are focused on creating world-class vehicles and expanding our reach to take advantage of new global markets. DS has been a great strategic partner who understands our vision and is now playing a crucial role in helping us realize it."



"CATIA 3D data models help us further improve quality design. With CATIA machining capabilities, the 3D models can also be directly used for the production process."

Yong Zhang  
Deputy Director of IT Department, GWM



Dassault Systèmes  
10, rue Marcel Dassault  
78140 Vélizy Villacoublay – France  
+33 (0)1 61 62 61 62



SolidWorks®, CATIA®, DELMIA®, ENOVIA®, SIMULIA® and 3DVIA® are registered trademarks of Dassault Systèmes or its subsidiaries in the US and/or other countries.

Images courtesy of Great Wall Motor

© Copyright Dassault Systèmes 2010  
All Rights Reserved

For more information or to contact a sales representative, please visit [www.3ds.com/contacts](http://www.3ds.com/contacts)