Warmly welcome distinguished experts! 热烈欢迎尊敬的专家!



江苏省如高高压电器有限公司 Jiangsu Rugao High Voltage Electric Apparatus Co., Ltd.

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Part 1: Company Profile 第一部分: 公司简介

1.1 Overview 概况 Sieyuan

■ History & Development 历史与发展

- Rugao company is located in the world famous longevity —— Rugao city , 如高公司坐落在世界著名的长寿之乡——如皋市,
- > Established in 1967, and restructured to be one wholly-owned subsidiary of Sieyuan in 2002; 成立于1967年, 2002年改制成为思源电气全资子公司;
- > Research, develop & manufacturing HV Disconnector and HV Circuit Breaker, and provide complete set solution; 专业从事研究、开发与制造高压隔离开关和断路器,同时提供成套解决方案;
- Workshop areas: a 9,000 sq.m. workshop for sealing and purifying SF6 products, a 11,000 sq.m. workshop for assembling isolating switch, and over 50,000 sq.m. high voltage test center and office buildings;
 工厂区域:拥有9000平米的封闭洁净SF6生产车间,11000平米的隔离开关生产车间,以及50000平米高压试验中心和办公楼;
- Over 750 employees, including 46% engineers and technicians. 拥有超过750名在职员工,其中有超过46%的员工从事技术类工作。



Sieyuan 1.1 Overview概况

■ Take root in China, serve the world. 立足中国,服务世界





PRODUCTS & SOLUTIONS FOR: 提供产品与解决方案:

- Transmission and distribution 输电与配电
- Thermal power 火力发电
- Renewable energy 新能源
- **■** Industry 工业





OUR ADVANTAGE 我们的优势

- Save energy and enhance efficiency 节约能源,提高效率
- Provide more reliable and smart equipments and service to grids

为电网用户提供更可靠和更智能的设备

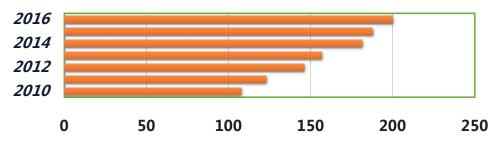
- Lowering environmental impact 对环境的低影响
- Sustainable development and innovation 可持续发展与创新



1.1 Overview 概况 Sieyuan

■ Annual Sales Volume& distribution 年销售额与分布

■ Contract Amount (Unit:Million USD)



■The bidding result in **State Grid of China**

Year	Rate of t	he bidding	Amount(Unit: Million USD)				
	Disconnector	Circuit breaker	Disconnector	Circuit breaker	Total		
2014	18%	13%	29.27	17.27	46.54		
2015	23%	17%	40.06	24.03	64.09		
2016	24%	30%	30.71	30.01	60.72		



Sieyuan 1.1 Overview 概况

■ Certificate 证书

01

More than 75sets test reports issued by the labs of STL(KEMA、CESI) 超过75份STL联盟试验室出具的检测报告(KEMA、CESI)

30 kinds new products have passed provincial appraisal;76 kinds products have passed 411 tests in national testing organization 30种新产品通过省级以上鉴定;76种不同产品通过国家相关检测机构出具的超过420份检测报告

Participate to build 16 national and industrial standards such as GB/T11022 参与包括GB/T11022在内的多个国家标准制定

Own more than 145 patents, including 35 for Invention and 110 for Utility Models 拥有145份专利,其中包括35项发明专利和110项实用新型专利



1.1 Overview 概况 Sieyuan

■ Certificate 证书



ISO 9001:2008



ISO 14001:2004



BS OHSAS 18001:2007

1.1 Overview 概况 Sieyuan

■ Type test reports certificated by STL,CNAS STL联盟、CNAS等检测机构认证报告

One-time pass rate of all products type test are more than 96%.

所有产品的型式试验一次性通过 率超过96%.

■ Our products can meet or even higher than standard requirements as IEC/IEEE/ANSI. IEC/IEEE/ANSI/GOST и др. 我们的产品满足甚至超过IEC/IEEE/ANSI/GOST等标准的要求.





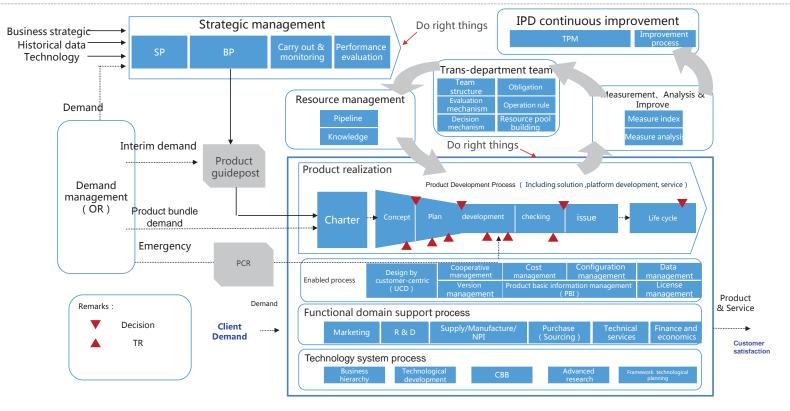




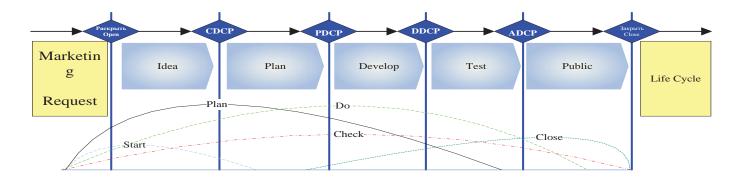


1.2 Innovation Management & Development 创新管理与研发——IPD管理流程

Sieyuan



■ IPD Management Process IPD 管理流程



■ Normative Innovation Management, to ensure the requirement of customer;

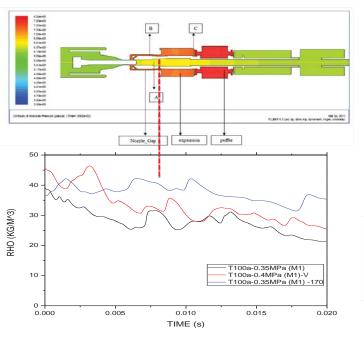
规范化创新管理,以满足客户的需求;

■ Six evaluation points as mentioned,to ensure the design quality of new products 通过上述6个关键控制点,以确保新产品研发的质量。

1.2 Innovation Management & Development 创新管理与研发--IPD管理流程

Sieyuan

■ Arc-simulation电弧仿真

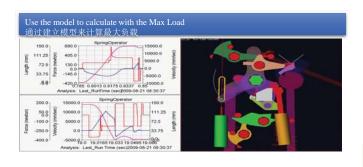


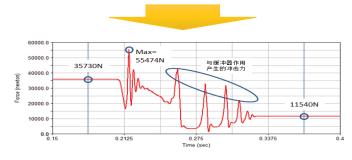


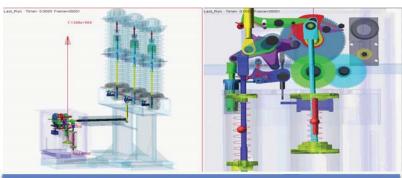
Static Arc Contact 静弧触头 Dynamic Arc Contact 动弧触头 AFTER TEST

1.2 Innovation Management & Development 创新管理与研发--IPD管理流程

■ Dynamics simulation运动力学仿真







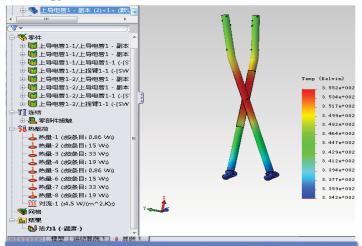
Calculate with load showed in the picture through ADMAS dynamics simulation calculation, to ensure the mechanism can withstand 10000 times

Operation(M2)
使用ADMAS动力学仿真软件对轴承进行选型仿真计算,确保轴承满足10000
次(M2)寿命使用要求。

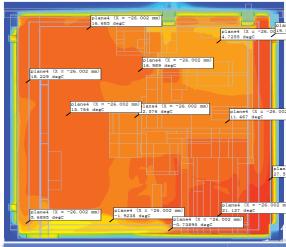
Best Solution

1.2 Innovation Management & Development 创新管理与研发——IPD管理流程

■ Thermology热学仿真

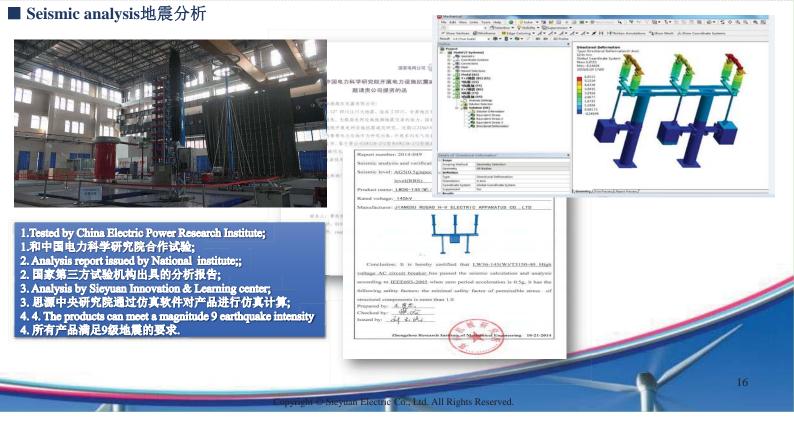


Use Thermal Simulation Analysis to guarantee low temperature-rise & low-energy 通过热学仿真确保低温升和低能耗



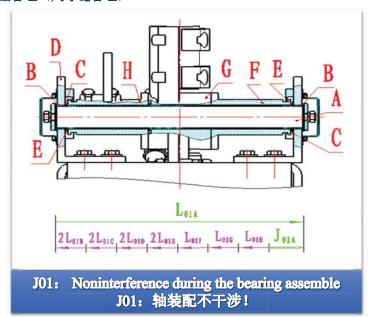
Temperature Field Simulation Analysis 温度场仿真分析

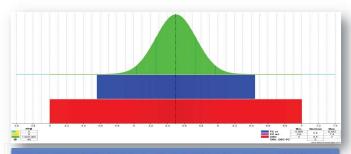
1.2 Innovation Management & Development 创新管理与研发——IPD管理流程



1.2 Innovation Management & Development 创新管理与研发——IPD管理流程

Tolerance management 公差管理(尺寸链管理)





Dimensional chain computing (TM software) – calculate the tolerance range of the components through the functional requirements, to meet the requirements of product consistency.

product consistency.
尺寸链计算(TM软件)——通过功能要求计算零部件公差范围,满足产品一致性要求。



Shanghai Jiaotong University 上海交過大学





Tsinghua University 清华大学



Liverpool University(UK) 英国利物浦大学

■ Cooperation 合作

Extensive Collaboration with Academic Institutes and Universities

与科研机构和高等院校开展广泛的合作。

1

1.3. Supply Chain & Quality Management 供应链与质量管理

■ Key components & process are made by Sieyuan self to keep the quality 关键性零部件和过程由思源自己生产,确保产品质量可靠





Contact finger of



Spring contact of Circuit STORKER 斯路器弹簧触指



nt of Circuit Breaker Contacts 断路器支座



Hot dip galvanized joint bearing 热镀锌关节轴承



- Silver plating of key parts are made by ourselves
 - 关键性零部件的电镀处理
- Key components are manufactured by ourselves

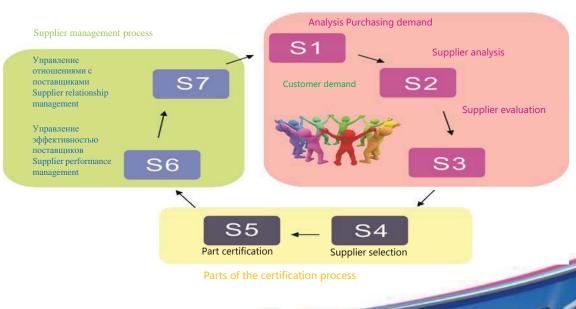
关键性零部件的自主制造

1.3. Supply Chain & Quality Management 供应链与质量管理

■ Supplier Development、Part Management and Supplier Management Process

供应商开发、零部件管理与供应商管理流程

Supplier development process



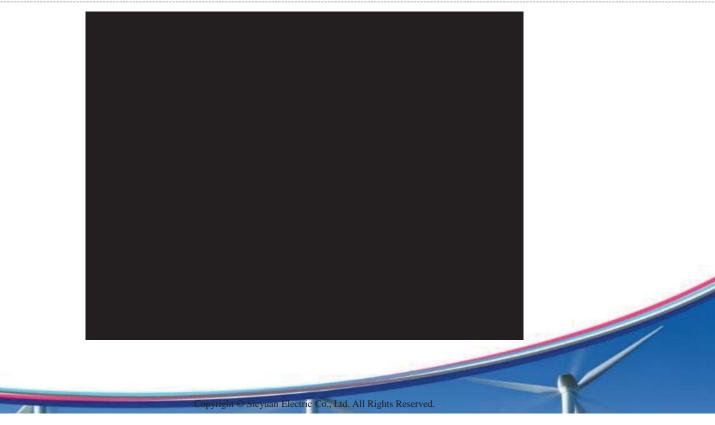
1.3. Supply Chain & Quality Management—Workshop 供应链与质量管理



Here, 在此,

- We have two latest automation assembly lines. 我们拥有两条全世界最先进的自动化生产线.
- We apply 5S management system in the whole course of production. 5S管理体系融入产品生产的全过程.
- Attentively complete each process. 专注于每一个过程.







- How to get a powerful assurance of quality?如何获得强大的产品质量保证?
- Parts inspection零部件检验 (Onsite supervision / Warehouse-in inspection)(内控检测/驻厂监督)
- Process inspection制程检验 (For each semi-finished products)(针对每一个半成品)
- Routine tests 出厂试验 (According to IEC/GB standards or Customer requirements)(依据IEC/GB 标准或客户的要求)

1.4. Social responsibilities & Promise 社会责任与承诺

■ Committed to environmental protection and public welfare

致力于环境保护与公益活动

■ Support the development of educational undertakings. 支持教育事业的发展.

regularly organizes education assistance 定期开展教育援助

■ Financial aid. 助学基金.

Establishing scholarships in Shanghai Jiaotong University, Xi'an Jiaotong University,...在上海交通大学、西安交通大学等设立专项奖学金

■ Environmental Protection. 环境保护.

Promote a low carbon,green travel."love running, love life". 倡导节能,环保出行."爱奔跑,爱生活".

Attended :The Global Energy Interconnection Development and Cooperation Organization (GEIDCO)

积极参与全球能源互联网建设(GEIDCO)













1.4. Social responsibilities & Promise 社会责任与承诺

■ Responsibilities and promise 职责与承诺

- We devote ourselves to high voltage disconnector & Circuit breaker. 我们专注高压隔离开关和断路器。
- We devote ourselves to meet customer demands. 我们致力于满足客户的需求。
- We devote ourselves to provide global service on design, manufacturing, delivery, installing and maintaining. 我们致力于在设计、制造、交付、安装和维护方面提供全球性服务。
- We devote ourselves to customer satisfaction. 我们致力于客户满意度。



Part 2: Product & Service 第二部分:产品与服务

2.1 Major Products 主要产品



2.1 Major Products 主要产品

■ 800kV and below voltage DS & ES 800kV 及以下电压等级 DS & ES



GW7B-40.5 to 800



GW23B-126 to 550



GW22B-126 to 550





GW1-31.5 GW1-2×31.5



GW5A-40.5 to 126



GW4A-40.5 to 252



GW4-31.5

■ 24kV and 12kV distribution equipments 24kV and 12kV 配网设备



2.2 Limit products & its performance部分产品及性能介绍

■ Applied environment适用环境

No.	Пункты 项目	Disconnector & Earthing switch 隔离开关和接地开关	Circuit breaker 断路器						
1	Ambient temperature 环境温度	-60℃ ~+55℃	SF6 gas SF₆ 气体 -40℃ ~ +55℃	Vacuum 真空 -60℃~+55℃	Mixture gas 混合气体 -50℃~+55℃				
2	Altitude 海拔	No more than 2000 m (High altit 不超过2000r	ude can be desigr n(高海拔地区	ned according to the 可按实际要求设计	actual requirements)				
3	Max. wind speed 最大风速		No more than 不超过 40n						
4	icing-thickness 覆冰厚度		No more than 2 不超过20m						
5	seismic intensity 地震烈度		nore than 9.0 eart 不超过 9.0 级地						
6	pollution grade 防护等级	d/e							
7	solar radiation intensity 太阳辐射强度	$1000\mathrm{W}/\mathrm{m}^2$							

2.3 Service Sieyuan



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More services 更多服务

- Assist in product selection at the beginning of the project design 在设计阶段提供专业的产品选型指导服务
- Provide professional theory, daily maintenance knowledge training in origin. 提供专业的理论知识、日常维护知识的培训服务
- Provide on-site installation, commissioning, use and regular maintenance of the training. 提供现场安装、运维、使用和定期维护的相关服务







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Part 3: Typical project 第三部分: 样版工程



■ Products under service in 230kV Laos Northern Power **Grid Project (Luang** Prabang). 230kV老挝北部电网(琅勃拉 邦)







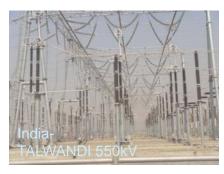






Overseas projects 海外工程











Sales Performance Laos market 老挝市场销售业绩

Sieyuan

tem	Date	Company Name	Project Name	Туре	Qty	Date of delivery	Country
1	2010/3/26	Beijing Power Engineering Co.,Ltd	Xeset-1 to Saravan115KV Power Transmission in Laos	LW36-126	4	2010/5/25	Laos
2	2010/3/26	Beijing Power Engineering Co.,Ltd	Xeset-1 to Saravan115KV Power Transmission in Laos	GW4A-40.5	16	2010/5/25	Laos
3	2010/3/26	Beijing Power Engineering Co.,Ltd	Xeset-1 to Saravan115KV Power Transmission in Laos	GW4A-126	11	2010/5/25	Laos
4	2010/12/21	CCC Engineering Ltd.	Laos DONK	LW36-40.5	9	2011/4/8	Laos
5	2010/12/21	CCC Engineering Ltd.	Laos NONG	LW36-40.5	7	2011/4/8	Laos
6	2010/12/21	CCC Engineering Ltd.	Laos LAKH	LW36-40.5	7	2011/4/8	Laos
7	2010/12/21	CCC Engineering Ltd.	Laos VANG	GW4A-126	2	2011/4/8	Laos
8	2010/12/21	CCC Engineering Ltd.	Laos VANG	GW5A-126	1	2011/4/8	Laos
9	2010/12/21	CCC Engineering Ltd.	Laos HINH	GW4A-126	3	2011/4/8	Laos
10	2010/12/21	CCC Engineering Ltd.	Laos OUDO	GW4A-126	6	2011/4/8	Laos
11	2010/12/21	CCC Engineering Ltd.	Laos NAMO	GW4A-126	3	2011/4/8	Laos
12	2010/12/21	CCC Engineering Ltd.	Laos NAXA	GW4A-126	4	2011/4/8	Laos
13	2010/12/21	CCC Engineering Ltd.	Laos NAXA	GW5A-126	2	2011/4/8	Laos
14	2010/12/21	CCC Engineering Ltd.	Laos DONK	GW4A-126	11	2011/4/8	Laos
15	2010/12/21	CCC Engineering Ltd.	Laos DONK	GW5A-40.5	18	2011/4/8	Laos
16	2010/12/21	CCC Engineering Ltd.	Laos NONG	GW4A-126	11	2011/4/8	Laos
17	2010/12/21	CCC Engineering Ltd.	Laos NONG	GW5A-40.5	14	2011/4/8	Laos
18	2010/12/21	CCC Engineering Ltd.	Laos LAKH	GW4A-126	11	2011/4/8	Laos
19	2010/12/21	CCC Engineering Ltd.	Laos LAKH	GW5A-40.5	14	2011/4/8	Laos
20	2011/1/27	Shanghai Sieyuan T&D Engineering Co.,Ltd.	Laos	LW36-126	19	2011/4/8	Laos
21	2012/6/18	Jiangsu Etern Co.,Ltd.	Laos - Xeset 2 to Sarah's	LW36-126	3	2012/8/30	Laos
22	2012/6/18	Jiangsu Etern Co.,Ltd.	Laos - Xeset 3 to Sarah's	GW4A-126	9	2012/8/30	Laos
23	2012/6/18	Jiangsu Etern Co.,Ltd.	Laos - Xeset 4 to Sarah's	GW4A-40.5	8	2012/8/30	Laos
24	2012/6/27	Dongfang Electric International Corporation	Laos Xe Nam Noy 1Hydro	LW36-126	3		Laos
25	2012/6/27	Dongfang Electric International Corporation	Laos Xe Nam Noy 1Hydro	GW4A-126	5		Laos
26	2012/10/31	'Dongfang Electric Group-	Laos Nam Ngiep 3A	LW36-126	5	2012/11/25	Laos
27	2012/10/31	'Dongfang Electric Group-	Laos Nam Ngiep 3A	GW4A-126	7	2012/11/25	Laos
28	2013/12/23	Jiangsu Etern Co.,Ltd.	THANG 230/115/22KV project	LW36-40.5	6		Laos

Sales Performance Laos market 老挝市场销售业绩

Sieyuan

tem	Date	Company Name	Project Name	Type	Qty	Date of delivery	Country
29	2013/12/23	Jiangsu Etern Co.,Ltd.	THANG 230/115/22KV project	GW5A-40.5	12		Laos
30	2013/12/23	Jiangsu Etern Co.,Ltd.	THANG 230/115/22KV project	GW4A-126	13		Laos
31	2013/12/23	Jiangsu Etern Co.,Ltd.	THANG 230/115/22KV project	GW6B-126	7		Laos
32	2013/12/23	Jiangsu Etern Co.,Ltd.	THANG 230/115/22KV project	GW4C-252	5		Laos
33	2014/5/1	FUJIAN YOUDAO TRADING CO.,LTD	Laos Saphaothong 115kv	LW36-126	3		Laos
34	2014/6/1	SOUTHERN POWER GRID YUNNAN INTERNATIONAL CO.,LTD	Laos state grid northern grid	LW36-126	12		Laos
35	2014/6/1	SOUTHERN POWER GRID YUNNAN INTERNATIONAL CO.,LTD	Laos state grid northern grid	LW58-252	27		Laos
36	2014/7/18	Dongfang Electric Corporation	Laos state grid Nam Sane 3A	LW36-126	8	2015/1/15	Laos
37	2014/7/19	Dongfang Electric Corporation	Laos state grid Nam Sane 3A	GW4A-126	13	2015/1/15	Laos
38	2014/9/19	Voith	Laos NamHinboun	LW36-126	4	2015/3/16	Laos
39	2014/9/20	Voith	Laos NamHinboun	LW36-40.5	1	2015/3/16	Laos
40	2014/9/21	Voith	Laos NamHinboun	GW4A-126	5	2015/3/16	Laos
41	2014/9/22	Voith	Laos NamHinboun	GW4A-40.5	2	2015/3/16	Laos
42	2014/9/23	CECEC Nanjing Electric Co.,ltd.	Laos 35KV project	GW4A-40.5	2	2014/10/31	Laos
43	2014/12/24	Union Resources & Engineering Co., LTD	Laos station expansion	GW4A-126	12	2015/2/8	Laos
44	2014/12/24	Union Resources & Engineering Co., LTD	Laos station expansion	LW36-126	5	2015/2/8	Laos
45	2014/12/24	Union Resources & Engineering Co., LTD	Laos station expansion	LW36-40.5	4	2015/2/8	Laos
46	2014/12/24	Union Resources & Engineering Co., LTD	Laos station expansion	GW4A-40.5	12	2015/2/8	Laos
47	2014/12/24	Sinohydro Corporation Limited	Laos 230kV Nam Ou 2, 5 & 6	LW58-252	6	2015/4/5	Laos
48	2014/12/24	Sinohydro Corporation Limited	Laos 230kV Nam Ou 2, 5 & 6	GW4C-252	16	2015/4/5	Laos
49	2015/1/1	Dongfang Electric Group	Laos Nam Sane 3B	LW36-126	1	2015/3/25	Laos
50	2015/1/1	Dongfang Electric Group	Laos Nam Sane 3B	GW4A-126	2	2015/3/25	Laos
51	2015/1/1	Dongfang Electric Group	Laos Nam Sane 3B	GW6B-126	1	2015/3/25	Laos
52	2015/4/5	China Hydropower Construction Group International Engineering Co., Ltd.	Laos Nam Khan 2 Station	LW36-145	2	2015/5/15	Laos
53	2015/4/5	China Hydropower Construction Group International Engineering Co., Ltd.	Laos Nam Khan 3 Station	GW4A-145	2	2015/5/15	Laos
54	2015/4/5	China Hydropower Construction Group International Engineering Co., Ltd.	Laos Nam Khan 4 Station	GW22B-145	4	2015/5/15	Laos
55	2015/5/1	Dongfang Electric Group	Laos Lanmang 1 Station	LW36-126	4	2015/8/30	Laos
56	2015/5/1	Dongfang Electric Group	Laos Lanmang 1 Station	GW23B-126	6	2015/8/30	Laos
57	2015/9/1	China Gezhouba Group Co., Ltd.	Nanjian hydropower project	LW36-126	3	2016/6/25	Laos
58	2015/9/1	China Gezhouba Group Co., Ltd.	Nanjian hydropower project	GW4A-126	8	2016/6/25	Laos



Make power transmission and distribution safer, more controllable and more efficient.

Sieyuan