

互联网+智慧能源管理的探索与实践

Exploration and Practice of Internet + Smart Energy Management

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《关于积极推进“互联网+”行动的指导意见》 Action Guideline of Actively Promoting "Internet +"

2015年7月,国务院印发《指导意见》,提出“互联网+”智慧能源概念,提出推进能源生产和消费智能化,建设分布式能源网络,发展基于电网的通信设施和新型业务。

9月,习近平在联合国发展峰会发表重要讲话,提出建议探讨构建全球能源互联网,推动以清洁和绿色方式满足全球电力需求。

June,2015, the State Council issued <the Guideline> and proposed the concept of "Internet +" to promote energy production and consumption intelligence, to construct distributive energy resource internet, and to develop communication facilitates and new type business.

While attending the UN Millennium Development Summit in September, Chinese president Xi Jinping delivered important speeches and proposed to construct global energy internet to meet global power demand through a clean and green way.

1.2

能源互联网的关键词 Key Words of Energy Internet

利用互联网技术与互联网思维，融入到能源的生产、运输、消费，实现能源产业的创新升级。

具体表现在**三个关键词**：

Integrate internet technologies and internet thinking modes into the production, transportation and consumption of energy to realize industrial innovation and upgrading.

Mainly embodies in 3 key words:

主要论述能源之电力系统

Mainly focus on electrical power system



1.2.1

关键词1——物联网技术

Key word 1—Internet of things technology

物联网技术是能源互联网的基础

Internet of things technology – Foundation of energy internet

利用先进的传感器、控制技术和软件应用程序，将能源生产端、能源传输端、能源消费端的数以亿计的设备、机器、系统连接起来形成数据的集成与智能分析，实现智能化控制与资源协调新的能源商业模式奠定基础。

Taking advantage of advanced sensor, control technology and software application program, to integrate and analyze the data connected from billions of devices, machines and systems of energy production end, transportation end and consumption end, thus lay foundation to a new energy business mode where intelligent control and resources attain balance.

让终端设备“说话、沟通、记录所发生的一切”

Make the terminal device “say, communicate, and record anything happened”

The
INTERNET
of
THINGS



1.2.2

关键词2——智能分析

Key word 2—Intelligent Analysis

互联网对能源产业的技术渗透表现在大数据智能分析与预测。

Big data intelligent analysis and prediction is the main reflection of technical penetration internet has on energy industry.



▶ **大数据采集：**设备数据，运营数据，传输数据，电网历史调度数据，用户数据，电力市场等数据。

Big data collection: device data, operation data, transmission data, and power grid historical dispatch data



▶ **大数据分析：**发电量预测、需求侧预测，从而优化能源生产，优化电力调度，合理规划分布式能源的建设。

Big data analysis: accurate prediction of electricity generation and demand side, thus to optimize energy production and power dispatching, to reasonably plan the construction of distributive energy



1.2.3

关键词3——新商业体系

Key word 3—New Business System

运用互联网思维，能源产业形成新商业体系。 Through the application of internet thinking mode, a new business system forms in energy industry.

既是能源的消费者又是能源的生产者 Both energy user and producer

秉承互联网的自由、开放、共享精神，重构新能源体系。
With internet spirit of freedom, openness and sharing, to reconstruct the new energy system.



主动消费逆推能源调度与生产 Active consumption reacts on energy dispatching and production

合理调配调度清洁能源，开展需求侧响应交易服务。
To reasonably dispatch clean energy, and to carry out demand side response trading services.

需求侧的能效管理服务 Demand side energy efficiency management service

推广电能替代，提高清洁能源使用比例，提供能源托管服务。 promote the use of electricity power to replace other energy, increase the use proportion of clean energy and offer energy trust services.

大众创业，万众创新 Innovation

实现能源生产、销售与购买的市场化、多元化发展。
To realize the marketization and diversified development of energy production, selling, purchase

2.1

用好能源——南网能源公司

Make Good Use of Energy— CSG Energy

公司主营“节能服务、能源综合利用、清洁能源与可再生能源开发、互联网与电商平台”四大业务板块。

通过整合先进节能减排技术，帮助客户节约资源能源、提升能源效率，优化能源结构，为客户提供一揽子能源综合利用解决方案。

CSG Energy's main business consists of four segments, i.e. energy saving service, comprehensive utilization of energy, development of clean and renewable energy, and e-commerce platforms of energy conservation.

By integrating advanced energy efficiency technologies, to help users save energy, improve efficiency, optimize energy structure, and provide comprehensive energy utilization solutions.

用好能源

“用好能源”，包括两方面内涵：一是“把能源用好”，即提升能源的利用效率，通过挖掘客户巨大的节能潜力，来减少能源消耗，缓解城市用能紧张；二是“用好的能源”，即清洁能源，如天然气、太阳能、风能等的开发利用，实现在用能中心的就近消纳，以优化客户能源结构，减少碳排放，改善国家生态环境。

Make Good Use of Energy

CSG Energy is dedicated to helping clients “make good use of energy”, which has two implications. For one, **“to make full use of energy”**, that is, to improve energy efficiency, to cut energy consumption and to ease up energy shortage in cities through exploring a tremendous potential of energy conservation for clients; for another, **“to use good-quality energy”**. In other words, the company develops clean energy like natural gas, solar power, and wind power, which will be first consumed by nearby consumers and hence optimizes clients' energy consumption structure, reduces carbon emissions, and improves the country's ecological environment.



中国南方电网
CHINA SOUTHERN POWER GRID



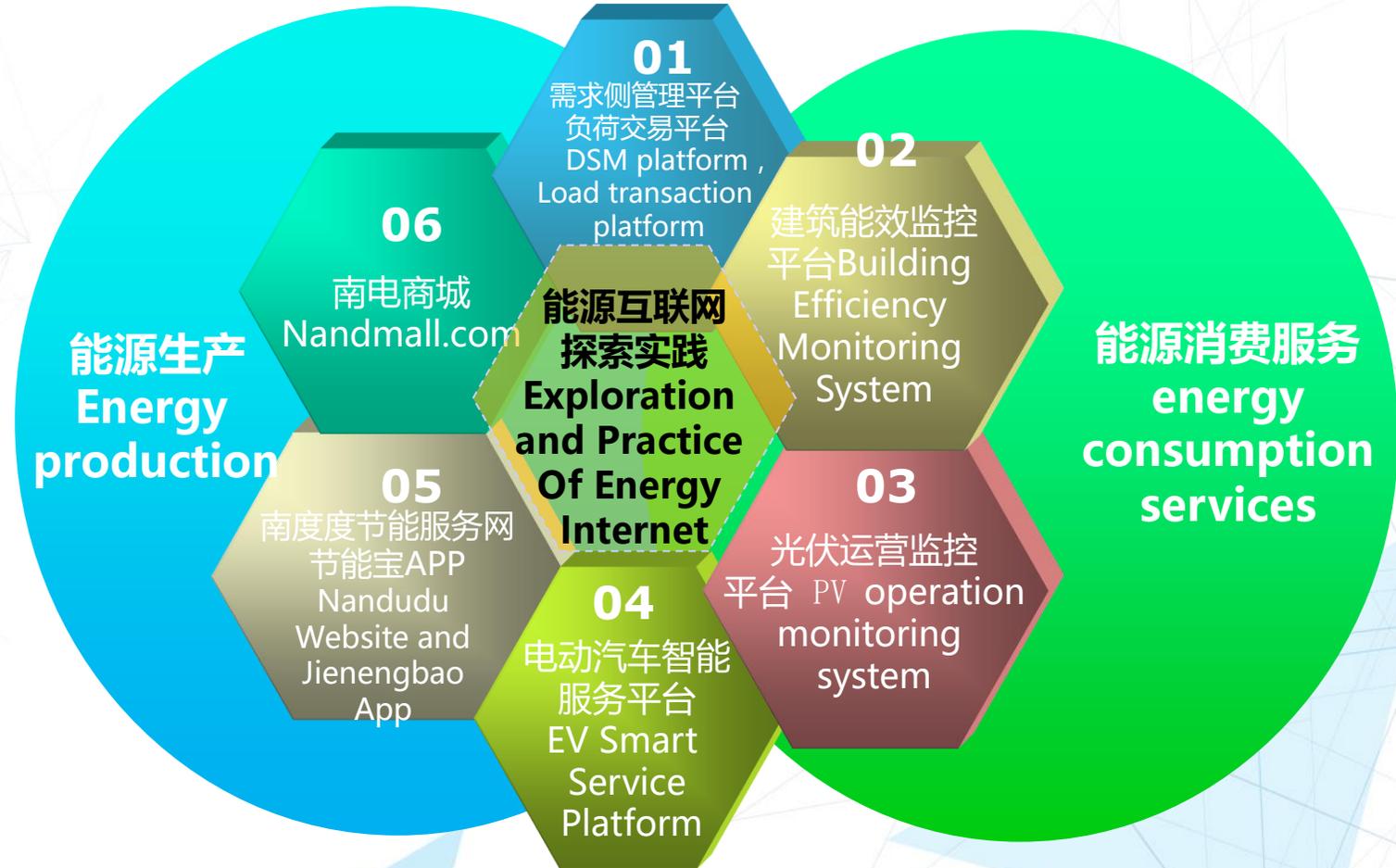
南网能源
CSG ENERGY

2.1.1

用好能源——能源互联网探索与实践 Make Good Use of Energy—Exploration and Practice Of Energy Internet

南网能源在能源生产及能源消费服务领域，不断探索及应用新的技术，运用互联网思维打造新的商业模式，组建能源与互联网跨界团队，自主研发了一系列产品和平台，为社会提供更好的能源服务。

In the field of energy production and consumption services, CSG Energy continues to explore and apply new technologies, create new business mode by applying internet thinking mode, set up specialized team crossing the industry of energy and internet, independently research and develop a series of products and platforms, thus to offer better energy services to the society.



2.2

建设需求侧管理平台Build DSM Platform



佛山电力需求侧管理平台项目 Foshan DSM Platform

佛山是我国首批四个电力需求侧管理城市综合试点之一。

实现用电管理的“数字化，网络化，可视化，专业化”，体现出对电力用户“以需定用”，“以需定供”负荷管理的佛山特色。

Foshan is one of the four earliest pilot cities that implement power demand side management in China.

To realize the Digitalization, Network, Visualization and Professionalization of power consumption management, and reflects Foshan load management feature of “usage according to demand” and “supply according to demand”.

需求侧管理平台的意义

Significance of DSM Platform

通过**服务模式创新**助力解决电力供需平衡的矛盾;

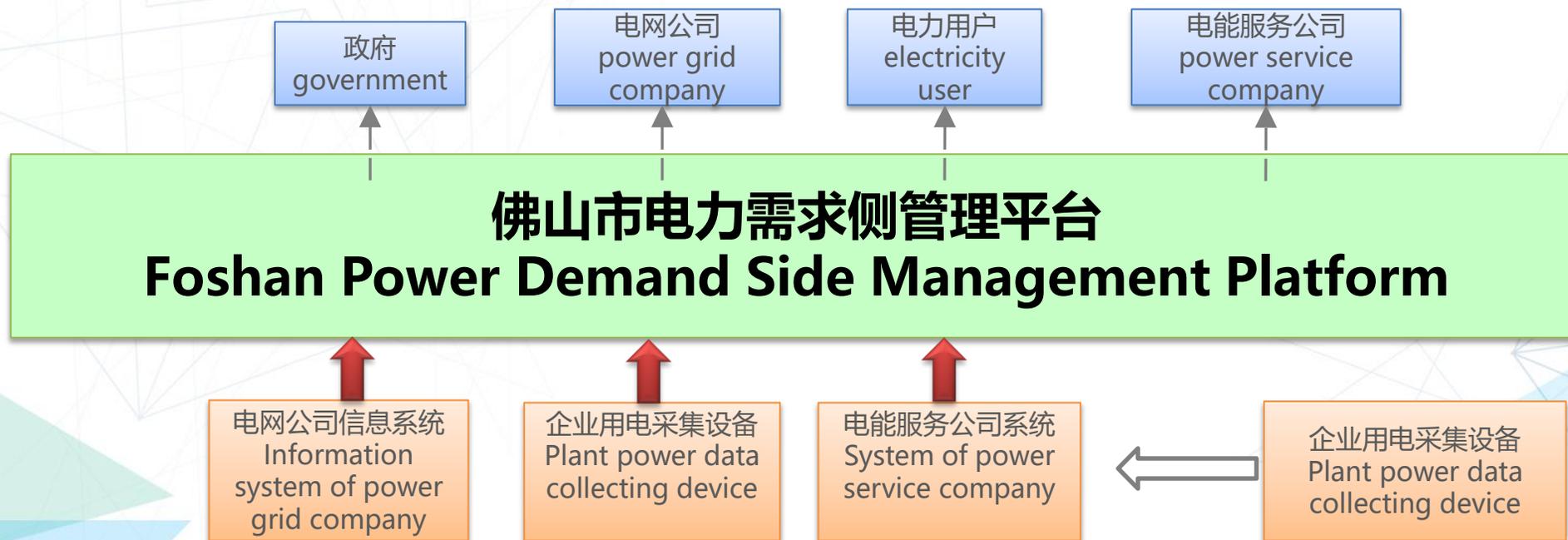
促进电力节能产业的发展，实现节能减排的目标;

为电力系统全供应链提供**智能化信息服务及决策支撑**;

to reach power demand and supply balance through **service mode innovation**;

to **promote electricity energy saving industry development**, and achieve energy saving and emission reduction;

to **provide intelligent information services and decision-making support** to the whole power system supply chain.



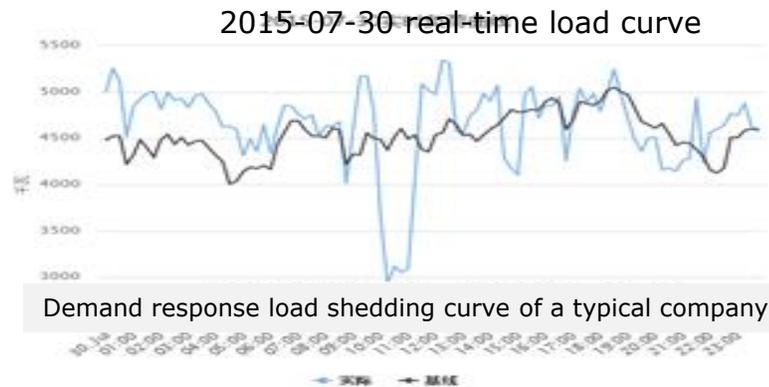
需求响应成果 Achievements of DSM Platform

截止目前，共执行需求响应15次，总签约量21万千瓦。

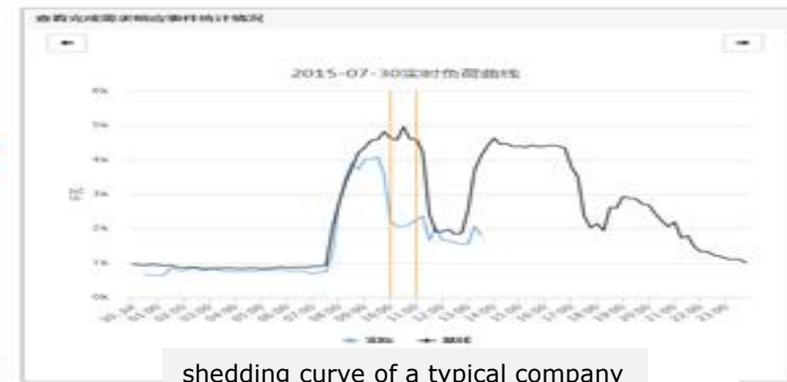
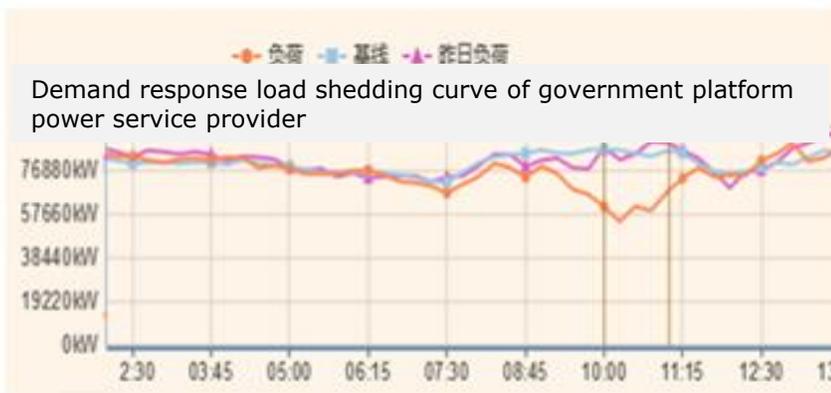
南网能源公司完成5.8万千瓦。

By far, 15 demand responses have been carried out covering the power amount of 210,000 kWh.

58,000 kWh is finished by CSG Energy.



Demand response pilot platform on-site dispatch command



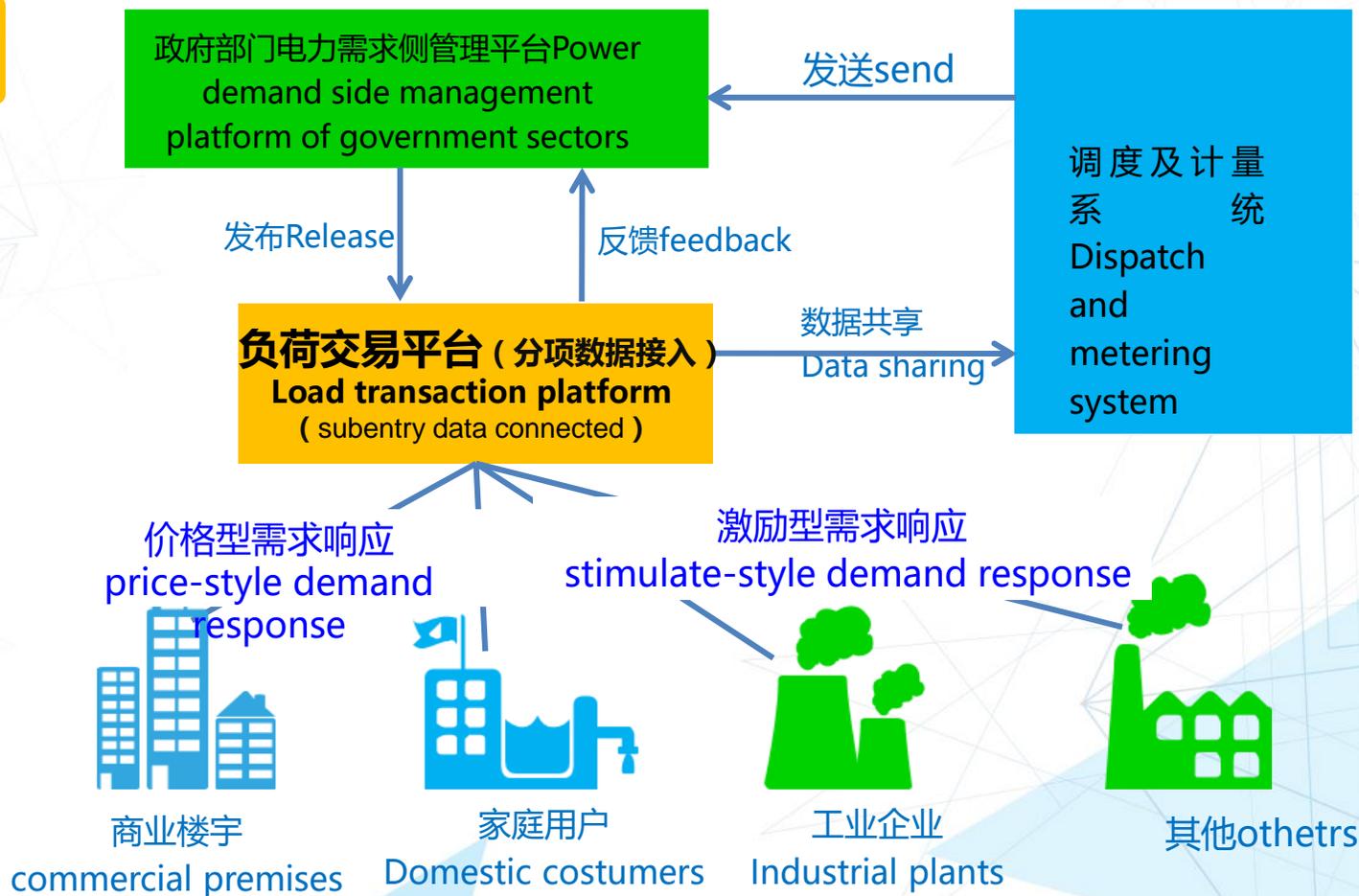
2.3

进一步建设负荷交易平台 Further Build Load Transaction Platform



负荷交易平台 Load transaction platform

- Safeguard Power grid stabilization and reduce investment
- Shedding peak load and balance the difference between peak and valley
- Learn real-time subentry power data of users
- Make role of stimulate-style demand response and price-style demand response, and carry out demand response transaction through the platform
- Help power users save energy and share benefits





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2.4

建筑能效监控系统 Building Efficiency Monitoring System



自主研发“看能”建筑能效在线监测分析系统，可实现能源全生命周期管理，并广泛应用
Independently research and develop the SeeEnergy™ System of Online Monitoring and Analysis of Building Energy Efficiency and gain wide application

荣获奖项Honors：

- 广东省优秀云计算产品和应用奖
Guangdong Excellent Award of Products and Applications in Cloud Computing
- 十二五节能减排科技创新成果先进技术
Advanced Technology of the Twelfth Five-year Energy Saving and Technology Innovation & Creation

物联网数据采集、传输
Data collection and transmission of internet of things



建筑设备
Building device



Real-time and accurate energy saving consultancy and services provided by long-distance-

专家远程、实时精准的节能咨询与服务

云计算和大数据处理
Cloud computing and big data processing



2.4.1

建筑能效监控系统案例

Case of Building Efficiency Monitoring System

广东大厦建筑节能示范项目

Guangdong Mansion Building Energy Efficiency Pilot Project

- 2014年10月，公司为广东省政府下属四星级酒店广东大厦实施的建筑节能项目，完成3台一级能效中央空调主机更换、6000余盏LED照明节能改造、增加风源热泵系统等任务。
- 公司将为大厦建设“看能建筑能效在线监测分析系统”、实施配电网改造等，可实现**年节省电量97万千瓦时、节电10%以上**，年节省燃气15万立方、同比2012年节约32%。

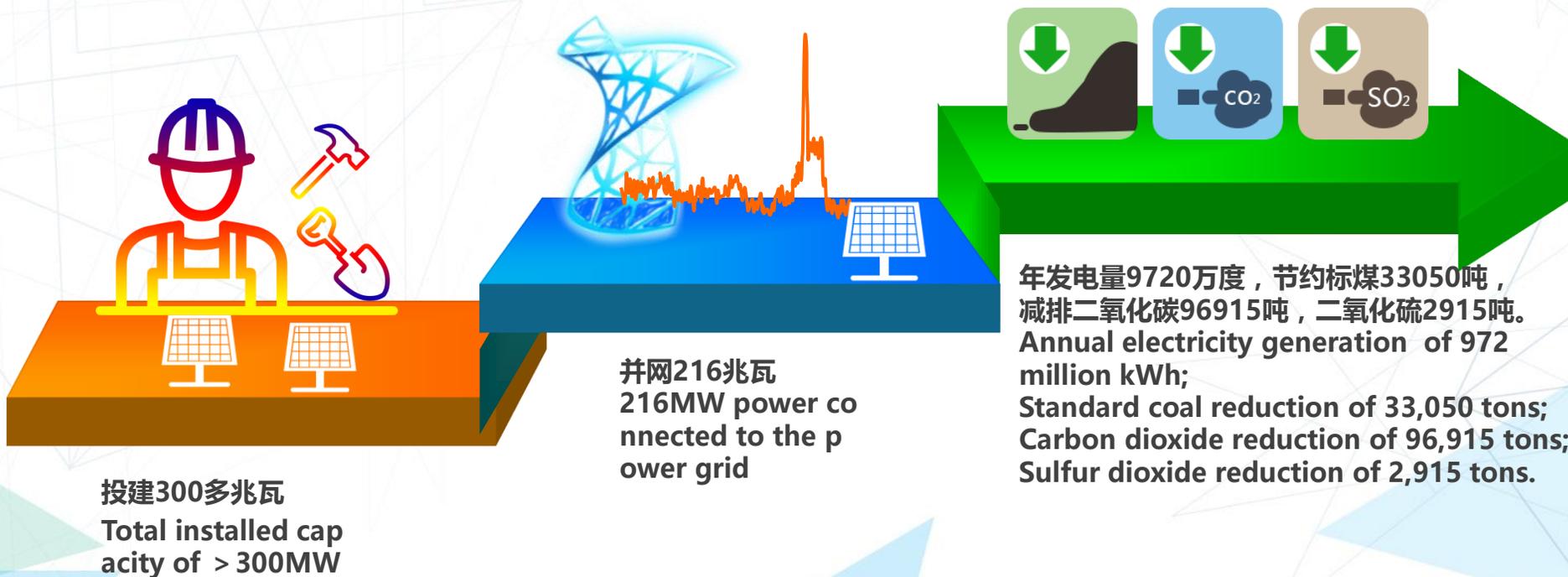


- In October 2014, CSG Energy made retrofit for Guangdong Hotel, a four-star hotel subordinated to Guangdong provincial government, replaced three sets of first-class energy efficiency central air-conditions, retrofitted more than 6000 LED lamps, and established a heat pump system, etc.
- CSG Energy helped Guangdong Hotel construct “SeeEnergy building energy efficiency on-line monitoring analysis system” and carried out power distribution network retrofit, with an annual electricity saving of 970,000 kWh, over 10% less, and fuel gas saving of 150,000 m³, 32% less compared with the usage amount of 2012.

2.5

光伏运营监控平台 PV Operation Monitoring Platform

- 目前投建52个屋顶光伏发电项目，装机容量300多兆瓦。
Construct and carry out **52 PV projects with a total installed capacity of more than 300 MW.**
- 光伏运营的总监控平台，通过大数据的集中分析，实现分布式光伏电站的智能化监控。
an overall monitoring platform of PV operation and **intelligent monitoring of distributive PV power station by big data analysis.**



以数字化为基础，实时分析各区域以及历史发电数据，实现电站管理智能化
Based on digitalization, to real-time analyze the regional and historical power generation data and to realize intelligent management of power station



智能运维

Intelligent operation & maintenance

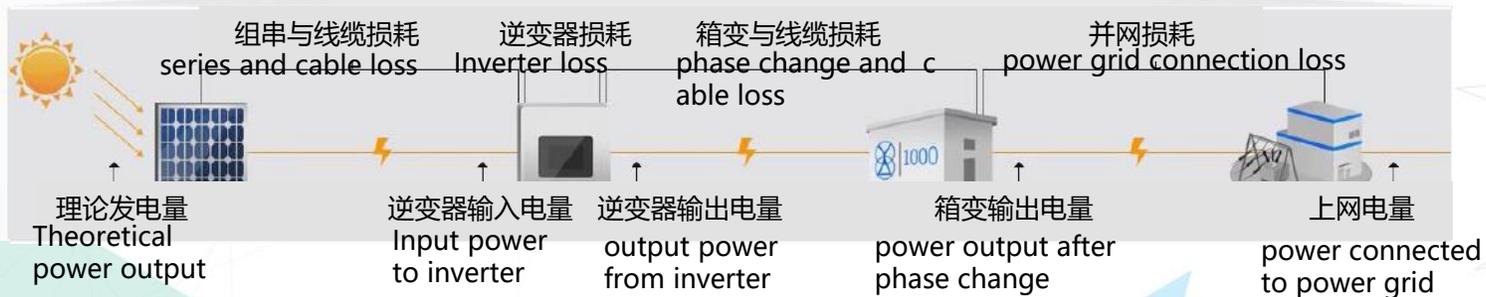
智能分析

Intelligent analysis

全数字化

Full digitalization

站级监控系统 站级生产管理系统
Station level monitoring system
Station level production management system



数据实时传输生产运营中心，手机端也可以实时了解电站状态，实现移动互联
Data transmits from the production and operation center in real-time, real-time condition of power station can learned by mobile phones, and thus realize mobile internet era.





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南网能源
CSG ENERGY

2.6

电动汽车智能服务平台EV Intelligent Service Platform

南网能源为新能源车，提供安全、便捷、优质、经济的充换电服务，搭建电动汽车智能服务平台。
CSG Energy provides safe, convenient, high-quality and economical charging service to new energy EV and sets up an EV intelligent service platform.



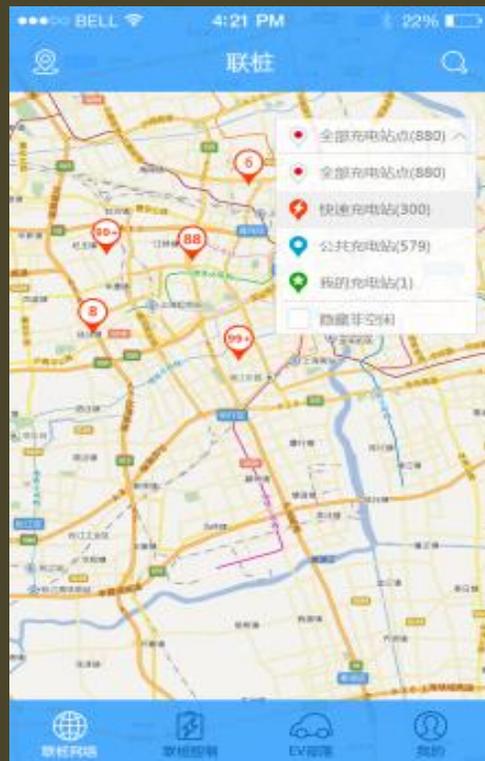
用户通过手机就可以查询所在地的充电设备位置，充电状态，扫描二维码开始充电，缴费。

Location of local chargers and charging state can be checked by mobile phones, and charging can be started and charging fee can be paid through scanning QR code.



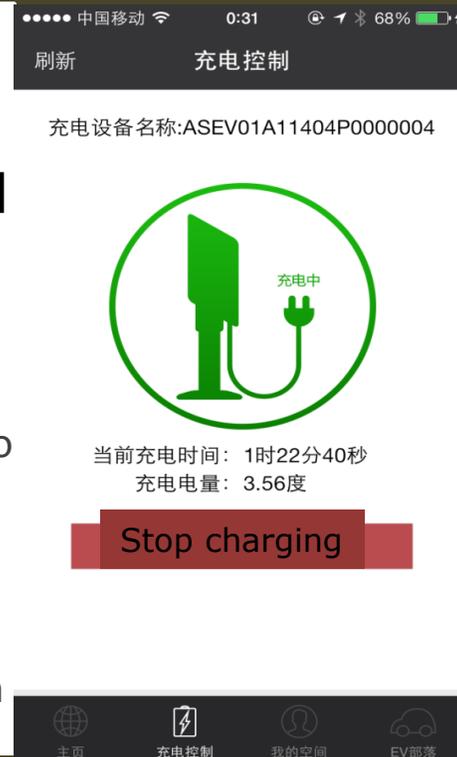
联桩网络 Web connected

- 实时查询;
- Real time check
- 共享信息平台;
- Information sharing
- E-Mobi地图导航;
- E-Mobi Map Navigate



联桩控制 Mobile controlled

- 手机身份验证;
- Mobile authentication
- 远程控制充电;
- Long-distance charging contro
- APP远程查看;
- APP long-distance check
- 充电异常通知;
- Charging problem notification



2.7

南度度节能服务网

Nandudu Energy Saving Service Website

▶ 打造央企一站式综合节能电商平台
To set up a one-stop comprehensive energy efficiency e-commerce platform



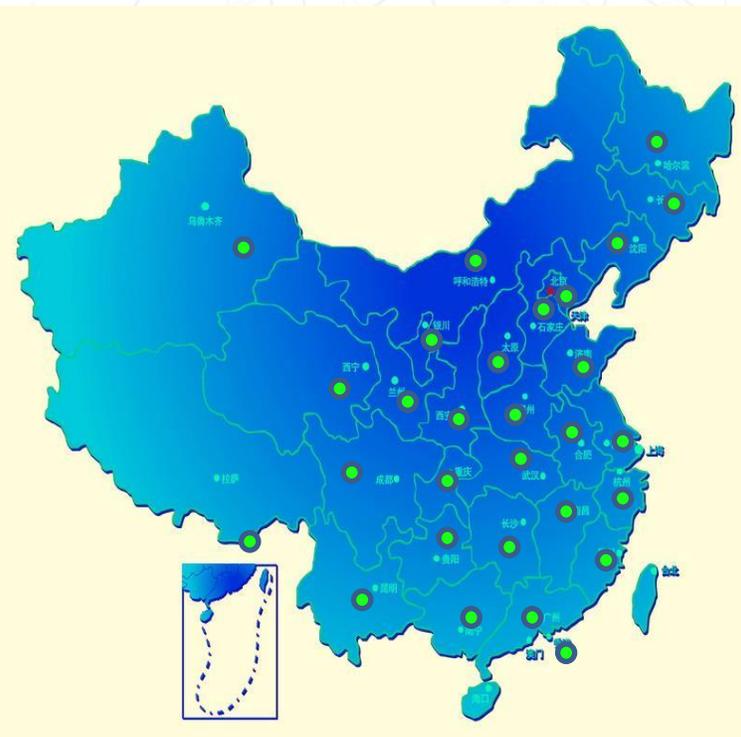
- 南方电网的节能服务示范窗口；
- demonstration window of energy saving services of CSG;
- 节能资讯服务、节能技术与产品推广、撮合节能项目等服务；
- Provide services as energy saving consultancy services, energy saving technology and product promotion
- 高端展会、论坛和大客户交流会等诸多形式，搭建节能服务企业 and 用能客户的共赢桥梁。
- Organize high-end exhibitions, forums and major client exchanges and set up a win-win bridge between energy saving companies and power users.

2.7.1

南度度的用户Members of Nandudu Web

▶ 致力打造节能行业“阿里巴巴”

Dedicate to become 'Alibaba' of energy efficiency industry



上线一年来，注册会员企业**1294家**，已成为国内领先的**B2B**节能产品垂直电商交易平台，以及线上引流线下交易**O2O**节能服务平台。

After 1 year operation, Nandudu Web has 1294 registered members and become a domestic leading B2B energy efficiency product trading platform and O2O energy efficiency service platform.



利用平台示范效应，年达成100个节能项目并带动1000家企业参与，在未来2-3年内带动全国节能产业百亿规模的项目与产品交易。

With the demonstration effect of the platform, 100 energy saving projects are carried out yearly and 1000 companies are covered. In the future 2-3 years, Nandudu Web will promote billions of projects and product trading in nationwide energy efficiency industry.

2.7.2 南度度的合作伙伴 Partners of Nandudu Web

南度度与国内外知名的、致力于节能与新能源领域组织开展紧密而务实的各类合作。

Nandudu Web joins hands with domestic well-known organizations dedicated to new energy and carries out close and practical cooperation.



世界银行
World bank



亚洲清洁空气中心
Clean air center
in Asia



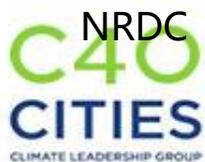
国家电网
STATE GRID

国网能源研究院
STATE GRID ENERGY RESEARCH INSTITUTE

国网能源研究院
SGERI



自然资源保护协会



NRDC
C40城市集团
C40 cities group



财新网
Caixin



英国驻广州总领馆
British consulate general
in Guangzhou



国际能源署
International
Energy Agency



矮马博客
Pony blog



德国华人新能源协会
Chinese association of
new energy in Germany



世界资源研究所
World Resources
Institute



南方能源观察

南方能源观察
Energy Observer

2.7.3 南度度的行动—传播资讯 Actions of Nandudu Web-Knowledge Delivered

南度度22次专访行业高端人物，拥有一批知名专栏作家，向业内外传达节能新知。

organized 22 times of exclusive interview of high-level specialists in energy efficiency industry and has a group of columnist to deliver new energy saving knowledge to the industry.



2.7.4 南度度的行动——节能培训 Actions of Nandudu Web—Energy Efficiency Training

南度度高度关注并践行**节能技术推广**，全年面向企业开展40场节能培训超过1000人次。
Nandudu Web highly focuses on and **practices energy efficiency technology promotion** and organizes 40 trainings yearly coving more than1000 people.



40
times

1000
people



2.7.5

南度度的行动—节能宣传

Actions of Nandudu Web—Energy Efficiency Propaganda

南度度多次组织高端论坛，打造行业盛会，同时积极开展节能宣传活动，多次走进校园，走进社区，走进企业，像大众普及节能知识，促进全社会节能。

Nandudu Web actively organizes high-end forum, grand industry meetings, energy propaganda activities, and walks into the schools, communities, companies to popularize energy efficiency knowledge and to promote energy saving of the society.

广东省第一届分布式光伏论坛

Guangdon Firs-session Distributive PV forum



走进社区推广节能

Energy Efficiency Propaganda in communities



2015广州市工信系统节能宣传周启动仪式

2015 Energy Efficiency Propaganda Week Kick-off



走进校园，开展节能校园行宣传活动

Energy Efficiency Propaganda at schools



南度度节能宝APP

Nandudu Jienengbao App

2.7.6

研发移动端南度度节能宝APP，用户可以通过移动端实现初步的节能诊断，查阅节能政策，业务知识，节能培训，节能案例，节能资讯等。

Research and develop Nandudu Jienengbao App. Through the App, users can have a preliminary energy saving diagnosis, learn policies, professional knowledge, training, cases, and news regarding energy saving.



南电商城
nandmall.com



南网情深 度度节能

热门搜索：吸顶灯 水晶灯 家庭光伏 摄像机 报警器

所有商品分类

绿色照明

- 筒灯/射灯 吸顶灯 吊灯
- 灯带/灯管 智能灯 壁灯
- 球泡/台灯 落地灯

家庭光伏

- 家用系统 安装工程服务
- 终端产品 车用光伏系统
- 光伏组件 太阳能热水器
- 维护/清洗服务

新能源汽车

- 纯电动汽车 油电混动汽车
- 小型电动车 充电桩服务
- 充电桩

智能家居

- 智能安防 智能照明
- 智能控制

首页

LED lights

节能照明

家庭光伏

EV

新能源汽车

智能家居

节能服务

Household PV

Intelligent home

Energy saving services

我家的屋顶会发电!

公告

- 南电商城火热招商中!
- 庆贺晶科能源入驻南电商城
- 庆贺洲明翰源入驻南电商城
- 庆贺海康威视入驻南电商城



智能家居



绿色照明

新能源汽车



南网能源节能 与新能源商城

正式上线

打造四大家庭 能源升级空间

领先步入未来生活，体会 能源变革乐趣

家庭光伏



光伏收益计算器

年收益：**4254.47** 元
今日发电：**15.7** KWH/度
收益：**15** 元

减少CO₂
15.5 kg

计算



在线客服



未登录



联系人



购物车



顶部

2.8.1 南电商城的产品 Products of Nandmall.com

推广绿色能源渗透至生活的每一个角落，从想法到行动，我们帮您重新规划及应用绿色能源，提升能效，节约能源开支，让生活变得更加美好。

Promote clean energy to penetrate to every corner of our life. From idea to action, We would help you to re-plan and apply green energy to improve energy efficiency, to reduce energy cost and to make life better.



家庭光伏

绿色电力/省钱赚钱

Household PV system

Green power/money saving

1



照明节能

绿色科技/节电环保

Energy saving lighting

Green technology/
environment-friendly

2



智能家居

能源管理/提升能效

Intelligent home

Energy management/energy
efficiency improving

3



电动汽车

低碳减排/降低成本

EV

Low carbon emission/lower
cost

4

能源升级变革正在进行
一个新的能源时代篇章正在掀起

要么拥抱新的未来

要么等着被改变

大众创业

万众创新

探索与实践永不停息

Energy upgrading revolution is undergoing
A new energy era is quietly approaching

To embrace a new future

Or

Changed by the reality

Individual business rises

Innovation booms up

Exploration and practice never ever stops



专注用好能源 共建美丽中国

Focus on making good use of energy

Jointly build a more beautiful china

China Southern Power Grid Co. Ltd

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 86-20-3812-2715

 86-20-3812-2741



手机扫描二维码
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