目　录

第一单元

能源与电力

译前准备

一、基本概念

本领域涉及的口译主题包含火电、水电等传统能源与电力，以及新能源与电力，包括核电、风电、太阳能发电（光伏发电）以及生物质能发电等。随着我国明确提出“双碳”目标（即2030年碳达峰与2060年碳中和），能源使用效率提高、减少碳足迹、能源减排、能源政策等内容成为口译热点。与此同时，也有一些专业主题的探讨，例如电力领域的新专利、电动汽车中的混合动力、各种方式的储能技术、电池密度以及防火防刺破技术等。

电力口译中较具特色的难点在于不同单位之间的换算。例如，千瓦时（kilowatt hour，符号为kWh）是能量的基本单位，它等价于一千瓦（1kW）的功率作用一小时（1h），也就是我们平时常说的一度电。更大的企业或机构有时会使用兆瓦时（MWh）。“兆”在大多数科技领域中的含义是“万亿”，但是在电力领域中，“兆瓦时”表示为1,000,000瓦时，即1MWh=1,000kWh，因此“兆”在电力领域中的含义为“一百万”。

二、知识拓展

1 能源的分类

1）按能源的来源可以分为三大类。第一类是来自地球外部天体的能量，其中最重要的是太阳能。一般认为，煤炭、石油、天然气等化石燃料是古代生物沉积形成的，它们所含有的能量是通过植物的光合作用从太阳能转换来的，总称为化石能源。风能、水能、海流能等也是由太阳能转换来的，它们和草木燃料、沼气以及其他由光合作用而形成的能源都属于第一类能源。第二类能源是地球本身蕴藏的能量，如海洋和地壳

中储存的核燃料所包含的原子能以及地球内部的热能（地震、火山、地下热水、热岩层等）。第三类能源是地球和其他天体相互作用而产生的能量，如潮汐能。

2）按能源的形成可分为一次能源和二次能源。一次能源指自然界存在的、可直接使用的能源，如煤炭、石油、天然气、太阳能等，也称天然能源。二次能源指依靠一次能源制造或生产出的更适合人类生产活动的能量资源，是经过加工转换而形成的能源，如电能、蒸汽、煤气、氢气、火药、合成燃料等，又称人工能源。

3）按能源能否再生分为可再生能源和不可再生能源。可再生能源是消耗后可得到恢复补充，不产生或极少产生污染物的能源，如太阳能、风能等。不可再生能源是指被人类开发利用后，在相当长的时间内不能再生的能源，如煤炭、石油、天然气等。

4）按能源使用的成熟程度可分为常规能源（传统能源）和新能源。常规能源指人类已经长期广泛使用，技术上比较成熟的能源，如煤炭、石油、天然气等。新能源指虽已开发并少量使用，但技术上还不成熟，尚未普遍使用，却极具潜在应用价值的能源，如太阳能、风能、氢能等。新能源并不是新发现的能源，而是以新技术和新材料为基础，经过现代化的开发和利用，可以取代资源有限、对环境有污染的化石能源，新能源大多数是可再生能源。“常规”与“新”是一个相对的概念，随着科学技术的进步，它们的内涵将不断发生变化。

5）按能源消耗后是否造成环境污染可分为污染型能源和清洁型能源。煤炭、石油等是污染型能源，而水能、风能和太阳能等是清洁型能源。

2 2022 年我国能源发展情况

全年新能源汽车产量700.3万辆，比上年增长90.5%；太阳能电池（光伏电池）产量3.4亿千瓦，增长46.8%。绿色转型发展迈出新步伐。全年全国万元国内生产总值能耗比上年下降0.1%。全年水电、核电、风电、太阳能发电等清洁能源发电量29,599亿千瓦时，比上年增长8.5%。

In 2022, the output of new energy vehicles reached 7.003 million, up by 90.5 percent over the previous year; and that of solar cells (photovoltaic cells) was 0.34 billion kilowatts, up by 46.8 percent. New strides were made in green transformation. The national energy consumption per 10,000 yuan worth of GDP in 2022 dropped by 0.1 percent over the previous year. In 2022, the electricity generated by clean energy such as hydropower, nuclear power, wind power, and solar power was 2,959.9 billion kilowatt-hours, up by 8.5 percent over the previous year.

年末全国发电装机容量256,405万千瓦，比上年末增长7.8%。其中，火电装机容量

133,239万千瓦，增长2.7%；水电装机容量41,350万千瓦，增长5.8%；核电装机容量5,553万千瓦，增长4.3%；并网风电装机容量36,544万千瓦，增长11.2%；并网太阳能发电装机容量39,261万千瓦，增长28.1%。

By the end of 2022, the installed power generation capacity was 2,564.05 million kilowatts, up by 7.8 percent over that at the end of 2021, among which the installed thermal power generation capacity was 1,332.39 million kilowatts, up by 2.7 percent; the installed hydropower generation capacity was 413.50 million kilowatts, up by 5.8 percent; the installed nuclear power generation capacity was 55.53 million kilowatts, up by 4.3 percent. The installed grid-connected wind power generation capacity was 365.44 million kilowatts, up by 11.2 percent and the installed grid-connected solar power generation capacity was 392.61 million kilowatts, up by 28.1 percent.

3 科学家介绍：Nikola Tesla（尼古拉·特斯拉）

Many children are familiar with the Tesla coil used at science demonstrations and lectures to demonstrate what happens when you discharge a high voltage (but low current: it's current that kills, not voltage) over a small space. Films of *Frankenstein* often show, somewhat anachronistically, Tesla coils discharging lightning-like bolts.

很多孩子都对科学实验和科学讲座中的特斯拉线圈很熟悉，即当一个小空间内产生高电压时所产生的现象（电压高但电流低：致命的是电流而非电压）。电影《科学怪人》中就经常错误地出现特斯拉线圈释放出类似雷霆闪电的场景。

Nikola Tesla, an ethnic Serb from Smiljan, then part of the Austro-Hungarian Empire, started out his engineering life working for a telephone company in Budapest in 1881, aged 25. He'd already studied physics and maths; while there—while walking in a park, in fact—he had an inspiration and solved the equations relating to a revolving magnetic field, which he then drew in the ground with a stick and explained to a friend. Quite a patient friend, one suspects.

尼古拉·特斯拉是来自斯米湾村（当时属于奥匈帝国一部分）的塞族人。1881年，25岁的特斯拉在匈牙利布达佩斯一家电话公司开始了他的工程师生涯。当时，他已经学过物理和数学。有一天他在公园散步时偶获灵感，随后解出了与旋转磁场相关的方程。他用一根棍子在地上把方程式推导了出来并向他的朋友演示。这位朋友无疑颇具耐心。

Not much to you, perhaps, but those equations govern the induction motor, which is now the most common form of electric motor: three coils around an outside former, and a rotating element inside. If you run a current through the outside coils, and get the timing just right, then you create a current (and hence magnetic force) in the coils in the inside. So the inside rotor turns, but it doesn't have to touch the outer part: Less friction means less energy used. Compare that method to the carbon brushes needed in standard direct current (DC) motors, which wear away where they touch the inner rotor.

尽管对现代人来说感应电机原理公式可能不算什么，但这些公式铸就了现在最常见的电机运作机制：在外部线圈架上放置三个线圈，然后在内部放置一个旋转元件。如果在恰当的时候让电流通过外部线圈，那么内部线圈中会产生电流（从而产生磁力）。因此内部转子能够在不接触外部的情况下转动，而更少的摩擦意味着更少的能量消耗。将该方法与标准直流电机所需的碳刷进行比较，碳刷接触到内部转子的地方会产生磨损。

But it's in the development of mains electricity—the underpinning of our modern age—that Tesla really rules. When Americans tell the story of Thomas Edison, the famous inventor of the gramophone, and whose name is usually attached to the invention of the light bulb, Tesla's name is frequently left out.

但是，特斯拉真正居于主导地位的领域在电力，这也是现代社会发展的基础。美国人讲述著名发明家托马斯·爱迪生的故事时，常常提到他发明了留声机和灯泡，却忽略了特斯拉的功劳。

However Tesla, who became an American citizen in 1891, worked with Edison for years, improving many of the early inventions and turning them into something workable. The two were introduced in 1884, when Tesla came to the US, by a letter from a mutual friend to Edison which read, "I know of two great men. One is you and the other is this young man."

特斯拉在1891年成为美国公民。他曾与爱迪生合作多年，两人共同改进了许多早期发明并将其变为现实应用。1884年，特斯拉来到美国时，两人通过一位共同的朋友写给爱迪生的信相识，信中写道，"我认识两个伟大的人，一个是你，另一个就是这个年轻人。"

Yet it's thanks to Tesla, not Edison, that we have electricity coming out of plugs, and that we even have power stations able to generate serious amounts of energy. He won the

War of the Currents with Edison, who was convinced that DC—the sort that comes out of an ordinary battery—was the way forward for power generation and distribution. Tesla was able to show that alternating current (AC)—which swaps its polarity at a regular rate, 50 times a second in UK mains electricity—was far more efficient (you don't lose anything like as much energy in transmitting it over long distances).

多亏了特斯拉（而非爱迪生），我们才能够从插头中获得电力，才能建立发电站进行大规模发电。特斯拉赢得了与爱迪生的“电流之战”——爱迪生坚信直流电（即普通电池的电流）是未来发电和配电的方向，而特斯拉则证明了交流电的效率要高得多。交流电能够在英国电网中以每秒50次的频率规律地交换极性，并且在长距离运输中不会损失太多能量。

Even though Edison took to electrocuting dogs in public displays to show just how dangerous AC was (no, really), Tesla won the day. Where DC can only be transmitted for a couple of miles before the resistance of the lines reduces it to nothing, AC can be transmitted at high voltages for many times that distance. A side note: Did you know that the distribution equipment—transformers, transmission lines—is 80% of the cost of running an electricity company? The power generation is only 20%, which is why even if we had free electricity generation—say from nuclear fusion—the upkeep of the distribution network would still mean you'd get a bill every quarter. Quite probably it would still be for the house next door which isn't on the same provider, too.

尽管爱迪生曾在公开场合电击狗以显示交流电的危险（事实上并不危险），特斯拉还是赢得了最终的胜利。直流电在传输几英里后就会因为线路电阻减弱为零，而交流电可以在高电压下传输数倍于此的距离。插句题外话，你知道变压器、输电线等这些配电设备占电力公司运营成本的80%吗？而发电只占成本的20%。这就是为什么即使通过核聚变等发电方式实现无成本发电，维护电网的费用依然存在，你仍会收到季度账单。不是同一家供电公司供电的邻居家很有可能也会收到账单。

And to quote his biography, among his discoveries are the fluorescent light, laser beam, wireless communications, wireless transmission of electrical energy, remote control, robotics, Tesla's turbines, and vertical take-off aircraft. Tesla is the father of the radio and the modern electrical transmission systems. He registered over 700 patents worldwide. His vision included exploration of solar energy and the power of the sea. He foresaw interplanetary communications and satellites.

在特斯拉的传记中，我们可以看到他的发明创造包括荧光灯、激光束、无线通信、

无线电能传输、远程控制、机器人、特斯拉涡轮机以及垂直起飞飞机。特斯拉是无线电和现代电力传输系统之父。他在全球注册了700多项专利。他希望探索太阳能和海洋的能量。他还预见了星际通信以及卫星技术。

Then again, he also had ideas for the "death ray"—what we might now recognize as a directed energy weapon—and an ion-propelled aircraft (which was proven to be feasible).

除此之外，他还提出过"死亡射线"（现在可能认为这是一种定向能量武器）和离子推进飞行器（其可行性已被证明）的想法。

4 中国能源政策

《新时代的中国能源发展》白皮书（节选）
White Paper on Energy in China's New Era (Excerpt)

能源是人类文明进步的基础和动力，攸关国计民生和国家安全，关系人类生存和发展，对于促进经济社会发展、增进人民福祉至关重要。

Energy is the foundation and driving force for the progress of human civilization. It matters to the economy, to people's lives, to national security, and to the survival and development of humanity. It is of vital importance in advancing social and economic development and public welfare.

新中国成立以来，在中国共产党领导下，中国自力更生、艰苦奋斗，逐步建成较为完备的能源工业体系。改革开放以来，中国适应经济社会快速发展需要，推进能源全面、协调、可持续发展，成为世界上最大的能源生产消费国和能源利用效率提升最快的国家。

Since the founding of the People's Republic of China (PRC) in 1949, under the leadership of the Communist Party of China (CPC), a relatively complete energy industry system has been established. This has largely been achieved through self-reliance and hard work. Since the launch of the reform and opening-up policy in 1978, to adapt to the rapid development of the economy and society, China has promoted the development of energy in a comprehensive, coordinated and sustainable manner. Today, China has become the world's largest energy producer and consumer. Its transition to efficient energy utilization has been the fastest in the world.

中共十八大以来，中国发展进入新时代，中国的能源发展也进入新时代。习近平主席提出"四个革命、一个合作"能源安全新战略，为新时代中国能源发展指明了方

向，开辟了中国特色能源发展新道路。中国坚持创新、协调、绿色、开放、共享的新发展理念，以推动高质量发展为主题，以深化供给侧结构性改革为主线，全面推进能源消费方式变革，构建多元清洁的能源供应体系，实施创新驱动发展战略，不断深化能源体制改革，持续推进能源领域国际合作，中国能源进入高质量发展新阶段。

Since the 18th CPC National Congress in 2012, China has entered a new era, as has its energy development. In 2014, President Xi Jinping put forward a new energy security strategy featuring Four Reforms and One Cooperation, pointing out the direction for the quality growth of the energy industry with Chinese characteristics in the new era. China upholds the vision of innovative, coordinated, green, open and shared development with focus on high quality and restructuring of the supply side. It has been working on all fronts to reform the ways energy is consumed, to build a clean and diversified energy supply system, to implement an innovation-driven energy strategy, to further the reform of the energy system, and to enhance international energy cooperation. China has entered a stage of high-quality energy development.

生态兴则文明兴。面对气候变化、环境风险挑战、能源资源约束等日益严峻的全球问题，中国树立人类命运共同体理念，促进经济社会发展全面绿色转型，在努力推动本国能源清洁低碳发展的同时，积极参与全球能源治理，与各国一道寻求加快推进全球能源可持续发展新道路。习近平主席在第七十五届联合国大会一般性辩论上宣布，中国将提高国家自主贡献力度，采取更加有力的政策和措施，二氧化碳排放力争于2030年前达到峰值，努力争取2060年前实现碳中和。新时代中国的能源发展，为中国经济社会持续健康发展提供有力支撑，也为维护世界能源安全、应对全球气候变化、促进世界经济增长作出积极贡献。

A thriving civilization calls for a good eco-environment. Facing increasingly severe global problems such as climate change, environmental risks and challenges, and energy and resource constraints, China embraces the vision of a global community of shared future and accelerates its transformation towards green and low-carbon development in economy and society. In addition to promoting clean and low-carbon energy use domestically, China has been an active participant in global energy governance, exploring a path of worldwide sustainable energy alongside other countries. At the general debates of the 75th United Nations General Assembly in September 2020, President Xi pledged that China will scale up its Intended Nationally Determined Contributions by adopting more vigorous policies and measures, striving to have carbon dioxide emissions peak

before 2030 and to achieve carbon neutrality before 2060. In the new era, China's energy strategy will provide forceful support for sound and sustained economic and social development, and make a significant contribution to ensuring world energy security, addressing global climate change, and boosting global economic growth.

为介绍新时代中国能源发展成就，全面阐述中国推进能源革命的主要政策和重大举措，特发布本白皮书。

The Chinese government is publishing this white paper to provide a full picture of China's achievements in its energy development and its major policies and measures for energy reform.

口译技巧

数字口译一直都是口译中的重点和难点，几乎每次口译类的证书考试和口译竞赛中均会出现一些考查译员数字口译能力的段落。在科技口译领域中，数字出现的频率会更高，数量级会更大，所以对于口译员来说更具有挑战性。数字口译的难点主要有四个方面。

第一点为数字的指代意义，也就是一个数字的意义是什么。比如口译员记录了一个数字：133,239万千瓦，但是这个数字代表的是火电装机容量还是其他意义，经常会被口译员忽视，尤其是面临数字极为密集的段落，如：

> 年末全国发电装机容量256,405万千瓦，比上年末增长7.8%。其中，火电装机容量133,239万千瓦，增长2.7%；水电装机容量41,350万千瓦，增长5.8%；核电装机容量5,553万千瓦，增长4.3%；并网风电装机容量36,544万千瓦，增长11.2%；并网太阳能发电装机容量39,261万千瓦，增长28.1%。

因数字口译理解以及笔记所需要的精力和时间远多于其他类型信息，所以口译学习者往往将几乎全部注意力集中在了具体数字的听辨和笔记中，这个数字所表达的意义只能靠大脑记忆。但是当数字较为密集且数值较大时，大脑无法将所有数字表达的意义全部记住，就会导致信息缺失。在口译实践中，数字意义的错误往往会导致整个交际失败，例如记住了金额，但是忘记这个数字是营业额、利润还是亏损，会使得口译员费了九牛二虎之力记录下来的正确数字毫无意义。所以口译员在笔记时，应加强数字笔记的能力，争取在每个数字记录完整之后在后面增加一个符号或者缩写，用来记录数字所表达的意义。

第二个难点为单位，例如重量是吨还是斤，货币是美元还是人民币。单位的错误可能会导致最终数字几倍甚至成千上万倍的误差，所以在科技口译中，口译员应对各类单位了如指掌，并且做好单位换算的准备，如粮食产量从斤换算到公斤，温度从华氏度换算成摄氏度，面积从亩换算成公顷或者平方米等。这不仅考验了口译员的百科知识储备，还考验了口译员的口算能力。单位换算时，数字的精确程度视具体情况而定，一般情况下，可以先译出原单位的数字，也可以将换算的公式一并说出，为自己争取更多的时间，然后用about、nearly、more or less等词来处理单位转换后的数字。常见的科技单位换算如下：

面积：

1平方公里（km^2）=100公顷（ha）≈247.11英亩（acre）

1平方米（m^2）≈10.76平方英尺（ft^2）

1平方英寸（in^2）≈6.45平方厘米（cm^2）

1英亩（acre）≈0.41公顷（ha）=4,046.86平方米（m^2）

容积：

1美品脱（pt）≈0.47升（l）

1英品脱（pt）≈0.57升（l）

1美加仑（gal）≈3.79升（l）

1英加仑（gal）≈4.55升（l）

体积：

1立方米（m^3）≈35.31立方英尺（ft^3）

1立方英尺（ft^3）≈0.0283立方米（m^3）

1立方英寸（in^3）≈16.39立方厘米（cm^3）

其他单位还包括长度、重量、力、温度、压强、传热系数、热功、功率、速度、密度、热值等。

第三个难点为数位错误。数位只要错一位，最终数字的差异最少十倍。数位的准确性不仅要求口译员对中英两种语言的常见数位非常了解，也对口译员的认知、反应等能力有较高的要求。应对数位的最常见方法即为“点三杠四法”，也就是听到英文数字的时候，如实记录听到的1,000以内的数字，并且听到三位表达的时候，如thousand、million、billion等，用逗点隔开，之后在两点之间不足三位的数字左边补零；当听到中文数字时，如实记录10,000以内的数字，并且听到四位表达的时候，如万、亿、万亿等，用斜杠来分隔数字，再在两斜杠中间不足四位的数字左边补零。

第四个难点为数字本身，这一点的技巧相对比较少，只能通过大量的重复练习提

高数字敏感度。训练数字敏感度（尤其是对数字的各种英文表达作出迅速反应）的方法为看、听单纯的数字或包含数字的信息，用源语记下或复述该信息。

热身练习

词汇积累

flip side 负面，反面
blast furnace 高炉，鼓风炉
crisscross 相互交叉，纵横交错
ponder 仔细考虑，深思
geothermal (energy) 地热（能）
superconductor 超导体

练习建议

1. 分段练习，关注术语的准确性与逻辑性。这篇文章涵盖了能源使用和可再生能源等领域的专业术语，如fossil fuel dependence（化石燃料依赖）、renewable energy（可再生能源）、superconductors（超导体）等。为避免在口译时因术语或逻辑不清导致内容混乱，可以采取分段练习的方式：每段结束后，暂停翻译，用几秒钟总结主要内容和逻辑顺序。特别关注术语，如liquid fuels（液体燃料）或astronomical price tag（天文数字的成本）的准确表达，同时确保译文逻辑连贯，避免跳跃和冗余。
2. 练习对比表达，提高听译反应速度。文章中多次对比了不同能源形式及问题，例如：fossil fuel vs. renewable energy（化石燃料与可再生能源），current challenges vs. potential solutions（现存问题与潜在解决方案）。这些对比关系是文章的核心逻辑。在口译练习中，如果未能迅速捕捉并体现这些对比关系，译文可能显得平淡或脱离重点。可以提前标记文章中对比的核心句段，如On the flip side, we have abundant sun, water, and wind.（另一方面，我们拥有充足的阳光、水和风。）在练习时，特别关注对比词，如on the flip side、meanwhile、but，并尝试用流畅、自然的方式体现中文中的转折与对比感。可增加对比性表达的练习，如用“然而”“与此同时”等连接词加深逻辑层次。

Can 100% Renewable Energy Power the World?

Every year, the world uses 35 billion barrels of oil. This massive scale of fossil fuel dependence pollutes the Earth, and it won't last forever. Scientists estimate that we have consumed about 40% of the world's oil. According to present estimates, at this rate, we'll run out of oil and gas in 50 years or so, and in about a century for coal.

On the flip side, we have abundant sun, water, and wind. These are renewable energy sources, meaning that we won't use them up over time. What if we could exchange our fossil fuel dependence for an existence based solely on renewables? We have pondered that question for decades, and yet, renewable energy still only provides about 13% of our needs. That's because reaching 100% requires renewable energy that's inexpensive and accessible. This represents a huge challenge, even if we ignore the politics involved and focus on the science and engineering.

We can better understand the problem by understanding how we use energy. Global energy use is a diverse and complex system, and the different elements require their own solutions. But for now, we'll focus on two of the most familiar in everyday life: electricity and liquid fuels. Electricity powers blast furnaces, elevators, computers, and all manner of things in homes, businesses, and manufacturing. Meanwhile, liquid fuels play a crucial role in almost all forms of transportation.

Let's consider the electrical portion first. The great news is that our technology is already advanced enough to capture all that energy from renewables, and there's an ample supply. The sun continuously radiates about 173 quadrillion watts of solar energy at the Earth, which is almost 10,000 times our present needs. It's been estimated that a surface that spans several hundred thousand kilometers would be needed to power humanity at our present usage levels. So why don't we build that? Because there are other hurdles in the way, like efficiency and energy transportation.

To maximize efficiency, solar plants must be located in areas with lots of sunshine year round, like deserts. But those are far away from densely populated regions where energy demand is high. There are other forms of renewable energy we could draw from, such as hydroelectric, geothermal, and biomasses, but they also have limits based on availability and location. In principle, a connected electrical energy network with power lines crisscrossing the globe would enable us to transport power from where it's generated

to where it's needed. But building a system on this scale faces an astronomical price tag. We could lower the cost by developing advanced technologies to capture energy more efficiently.

The infrastructure for transporting energy would also have to change drastically. Present-day power lines lose about 6%–8% of the energy they carry because wire material dissipates energy through resistance. Longer power lines would mean more energy loss. Superconductors could be one solution. Such material can transport electricity without dissipation. Unfortunately, they only work if cooled to low temperatures, which requires energy and defeats the purpose. To benefit from that technology, we need to discover new superconducting materials that operate at room temperature.

课堂练习

1 英译中

词汇积累

austere 简朴的，苦行的
waste heat 废热（又称余热）
petawatt hour 拍瓦时
terawatt hour 太瓦时
gigawatt hour 吉瓦时

Speech at 2023 Investor Day (Excerpt)

So as Zach was mentioning, the thing that I think we wanted to convey, probably more importantly than anything else that we talk about here is that there is a clear path to a sustainable energy Earth. It doesn't require destroying natural habitats. It doesn't require us to be austere and stop using electricity and sort of be in the cold or anything. The story, and I think this holds together quite well, and we'll be actually publishing a detailed white paper with all of our assumptions and calculations, is that there is a clear path to a fully sustainable Earth with abundance.① In fact, you could support a civilization much bigger than Earth, much more than the eight billion humans could actually be supported sustainably on Earth.

And I'm just often shocked and surprised by how few people realize this. Most of the smart people I know actually don't see this clear path. They think that there's not a path to a sustainable energy future, or at least there's not one that is sustainable at our current population or that we'd have to resort to extreme measures. None of these is true. So we're going to walk through the calculations for how to create a sustainable energy civilization.

And today our energy economy, let's be honest, it's dirty and it's wasteful. Over 80% of global energy, primary energy, comes from fossil fuels, and only one third of that global energy actually ends up delivering useful work or heat. This is the problem statement, but we're here to talk about the solution.

Yeah, it's like, some of this I'm going to elaborate because there's a very wide range of technical expertise out there from people who are like, you know, whatever, level-nine wizards in the subject to people who do not do engineering at all.② So if you have a gasoline car, ~~you're converting~~ less than a third, often maybe only 25% of the energy in the gasoline is converted into motion. The rest is turned into waste heat. That doesn't do any good at all. And there's a lot of energy required even to get the oil out of the ground, to refine the oil, and to transport the gasoline to the gas station. So when you look at all that for a typical gasoline car, it's actually going to be using less than 20% fully considered of the energy from the oil actually into motion.

So this is a, when I see people, when we see people③ doing calculations for what does it take to create a sustainable energy Earth, they assume that the same energy amount is required for an electrified civilization versus a combustion civilization. This is not true because most of the energy of combustion is waste heat.

And even to get the fuel to combust in the first place and get it to the end use, there's a lot lost along the way. I mean, this is the primary energy consumption, 165 petawatt hours a year. Petawatt hour is a trillion kilowatt hours. So it's a large amount of energy. But the nice thing about electrified economy, there's a better way, we're going to talk about it, is that through end use efficiency and through efficiency along every step of the way, actually the total energy use halves④. So ~~this is~~ one of the most enabling aspects of electrifying everything, is that the sustainable energy economy is that much easier to accomplish. It's actually half the problem statement of the fossil fuel economy.

Yeah, and we're being conservative here, so it could be better than half. But we're trying to have assumptions that are reasonable, not overly optimistic, in fact slightly

pessimistic. So it's really better than half, but just say...it's easy to make the argument that we need half as much energy with an electric economy versus a combustion economy.

So the thing that is needed at very large scale that is not currently present is a vast amount of battery energy storage. Our rough calculations are that this is about 240 terawatt hours, or 240,000 gigawatt hours. This is a lot of batteries, but it is actually a very achievable amount. We'll go into details on that. So that's a combination of electric vehicles and stationary storage. So if you've got solar or wind, you've got to store the energy when the wind is not blowing, when the sun is not shining.

And so we're assuming sort of an eight to one ratio of stored energy to power. So 30 terawatt hours of power, 30 terawatts of power. Our actual capital expenditure calculation for manufacturing investment is more like six trillion, but we made it higher to make it 10 trillion.

And this is across mining, refining, battery factories, recycling, vehicle factories, all the things that we're going to talk about needing to invest in to build this sustainable energy economy.

Now, if you look at the total world economy, it's just under 100 trillion. ⑤ So if this was spread out, say, over 10 years, it would be 1% of the global economy. Over 20 years, it would be half a percent of the global economy. So this is not a big number relative to the global economy.

要点评析

本篇语料选自2023年某新能源汽车产品发布会上，其CEO对未来全球可持续能源的畅想。本篇语料从词汇上来说难度不大，在听力理解阶段不会给口译员造成很大困难，但是由于讲者的口头表达存在重复、逻辑性不强的特点，且部分句子较长，这对口译员的“脱壳”能力提出了较高要求。同时，如何在短时间内将原文转换成流畅、通顺且易懂的中文可能会有一定难度。

① 这句一开始的The story, and I think this holds together quite well...很难直接顺译，将整个句子听完以后可以尝试对句子做一定的整合，将这部分翻译成“将所有的事务结合成……”。

② 这句话很难理解，尤其是level-nine wizards，通过仔细分析上下文，尤其是本句话末尾的people who do not do engineering at all，可以推断出讲者是将这两

个概念进行对比。将people who do not do engineering at all翻译成“对工程一窍不通的技术小白”，那么与之相反的level-nine wizards就可以翻译成“技术大牛”了。

③ 演讲的一大特点就是会有一些重复和冗余的信息，在这里，So this is a, when I see people, when we see people可以直接翻译成“所以，当我们看到人们”，将不需要的this is a删除，将I和we合译为“我们”。

④ 这里的halve为动词，意思为“减少一半”，所以这里翻译为“全球实际上需要的总能源消耗将会减半”。与此同时，本句后面的冗余信息也需要做一些删减。

⑤ 科技口译中的数字难点之一便是单位，本篇文章中就出现了三个有关能量的单位，并且有两个因为较大，在日常表达中出现的频率较低。这里在表述时没有提及货币单位，但是根据大部分国家统计GDP的惯例，以及各种世界组织（如世界银行和国际货币基金组织）发布数据时的货币单位，还有讲者所来自的国家，不难推断出这里的货币单位为美元，所以在译文中需要将原文省略的货币单位增译出来。

2 中译英

词汇积累

中国电力企业联合会 China Electricity Council

生态文明 ecological conservation

碳达峰、碳中和 carbon peaking and carbon neutrality

中央财经委员会 the Central Committee for Financial and Economic Affairs

单位火电发电量 per unit of coal-fired power generation

克 / 千瓦时 gram per kilowatt-hour (g/kWh)

“双碳”目标 dual carbon goals

刚性增长 rigid growth

能源燃烧 energy combustion

终端用能行业 terminal energy consuming industry

冶金 metallurgy

有色（金属）non-ferrous metal

中国电力企业联合会党委书记在2021年生态文明贵阳国际论坛“绿色清洁能源”主题论坛上的演讲（节选）

尊敬的倪院士、岳院士，

尊敬的李冶总监，

各位领导，各位专家，同志们：

大家下午好。2020年9月22日，习近平总书记在第七十五届联合国大会一般性辩论会上的庄严承诺，为新时代我国全面绿色低碳转型开启新篇章。习近平总书记高度重视碳达峰、碳中和的工作，先后十余次提及碳达峰、碳中和，并在今年3月15日中央财经委员会第九次会议上作出重要指示。要把碳达峰、碳中和纳入生态文明建设整体布局，拿出抓铁有痕①的劲头，如期实现2030年前碳达峰、2060年前碳中和的目标。生态文明建设是关系中华民族永续发展的千年大计。

党的十八大以来，（在）以习近平同志为核心的党中央坚强领导下，全国各地深入地贯彻习近平生态文明思想，积极实施应对气候变化战略，有效扭转二氧化碳排放快速增长的局面。2019年，全国单位火电发电量二氧化碳排放（约）838克/千瓦时，比2005年下降（约）20%②；单位发电量二氧化碳排放（约）577克/千瓦时，比2005年下降（约）32.7%，有力支撑了2020年我国单位GDP二氧化碳排放强度下降目标的提前实现。

“十四五”是碳达峰的关键期窗口期，要努力构建清洁、低碳、安全、高效的能源体系，控制化石能源总量，着力提高（能源）利用效能，实施可再生能源替代行动，深化电力体制改革，构建以新能源为主体的新型电力系统③。今天在贵阳，围绕“低碳转型，绿色发展”的主题，前面的嘉宾都讲了很好的内容。今天我也与大家分享关于加快构建新型电力系统和综合能源服务，助力实现碳达峰、碳中和目标的一些粗浅认识。

以“十四五”能源电力发展趋势（来看），能源转型是实现碳达峰、碳中和的关键。我们既要实现“双碳”目标，破解温室气体和气候变化对人类社会带来的影响，以清洁绿色方式满足人类用能需求，提升经济社会的可持续发展能力，进而提升人类福祉；又要在实施路径中充分考虑成本与效益的关系，综合考虑转型发展和保持经济竞争力的关系，尽可能做到低成本减碳，高质量发展。

面对“双碳”目标，能源领域承担重要使命。“十四五”至未来一段时间，我国经济双循环发展新格局形成，新型城镇化建设和电气化进程加快，将推动电力需求保持刚性增长④。据中电联的初步预计，2025年、2030年、2035年我国全社会用电量将分别达到9.5万亿、11.3万亿和12.6万亿千瓦时。大家知道去年我们总的用电量是7.5万亿（千瓦时），“十四五”期间年均（预计）增速4.8%。

从电力特性看，传统能源、新能源转化为电力，是提升能源利用效率的有效途径。我国能源燃烧（碳排放）占全部碳排放的88%左右，电力碳排放占全社会碳排放的40%左右。近年来通过大力发展新能源，提升电网的调节能力，以及能源消费实施双控措施，节能减排取得巨大成绩⑤。随着全社会电气化水平的提升，更多的碳排放从终端用能行业转移到电力各个行业，建材、化工、冶金、有色（金属）都会在今后“双碳”目标之下实施电能替代。所以说更多碳排放将从终端用能行业转到电力（行业），电力行业碳减排的压力将持续加大⑥。在此背景下，加快构建以新能源为主体的新型电力系统，是电力工业促进自身碳减排、支持全社会碳减排的必由之路，也是实现电力工业高质量发展的必然选择。

要点评析

这篇材料具有一定难度，其一是数字较多，且单位的变化较大，考验口译员对数字本身、单位以及数字代表意义的熟悉度和敏感性；其二是同时列举的领域较多，如“建材、化工、冶金、有色（金属）”，这些信息相对重要，加上讲者语速较快，需要口译员用很短的时间记录下来，要求口译员对科技重要概念的缩写和符号非常熟悉。

① “抓铁有痕”通常以“踏石留印，抓铁有痕”的搭配形式使用。该表述是典型的治国理政用语，意为脚踏实地推进工作，无论任务多么艰巨，也要通过实干创造实绩。如果采用“直译＋释义”的方法可处理成step onto the stone and you should leave your footprint on it (one should take forceful steps and deliver tangible results)。但是在口译过程中可以通过上下文语境理解其中心旨意，将其直接简化为make solid efforts and substantial progress。

② 首先，此句易造成数字主语和数字单位的错用。“克/千瓦时”指每消耗一度电所产生二氧化碳的排放量（克），英文单位为“g/kWh”，是表示碳排放强度大小的单位。此句中的数字（年份、排放量、百分比）及相应单位较为密集，在实际口译笔记过程中，可根据情况适当简化数字笔记，着重理清数字单位与主语的逻辑关系和完整句意，避免因小失大。其次，汉语中多出现成分缺失现象，在译文中需要补足。

③ 这一句由六个动宾结构的中文短句组成。在听辨过程中译者应快速判断短句之间的语气态度，添加合适的关联词，将隐含的逻辑关系显化出来后，重新搭建目的语的句法结构。这就要求译者在平时熟悉并积累一些常见中文动宾搭配的

译法，如“提高效能”可表述为increase/improve/raise/enhance the efficiency，“实施行动”可表述为take actions/carry out/undertake/implement...，“深化改革”可表述为deepen/continue/further the reform，“构建系统”可处理为foster/form/build up/set up a new system。

④ 此处讲者的表述较为松散，容易造成笔记逻辑混乱。译者可通过前文提供的背景积极推导出各语块之间的递进关系：“十四五”的背景下形成了新发展格局，新发展格局促进了城镇化和电气化的发展，进而推动电力需求增长。译文中为了显化这一层递进关系，通过将with放在句首表示条件，与主句形成递进关系，突出此句话的主语electric power demands，前面的短句则都是为了electric power demands will maintain rigid growth做铺垫。with放在句首引导短语常表示条件或目的，尤其适用于短句多、主语杂、逻辑需显化的中文工作报告类文体。

⑤ 讲者在这一句中的表述上做了一些省略，因此译者在目的语输出过程中应补全省略的成分。“双控”指的是对能源消耗总量和能源消费强度进行控制，“实施双控措施”则是建立双控体系，即a dual control system of total energy consumption and energy intensity，译者要通过增译对该词做出解释。“节能减排取得巨大成绩”缺乏主语，这里通过添加主语we将结果提前为we have attained great achievements in...，并且重新调整语序，避免目的语表述头重脚轻。“节能减排”的常用表述为energy conservation and emission reduction。

⑥ “终端用能行业”指包括重工业、交通业、建筑业在内的高碳产业。终端用能电气化是降低工业领域碳排放、实现碳达峰碳中和目标的重要途径，可以将“终端用能行业”处理为terminal energy consuming industry。“电力行业”（electric power industry）则指生产、输送、分配电能的各部门。由于讲者在表述中多有省略，可能会造成听译的逻辑混乱，但结合产业背景知识仍可以领会讲者的意图。碳排放的转移将会导致电力行业的压力增加，这里的thus将两句话的因果逻辑关系显化出来，或者也可以用with引导短语来表述。

拓展训练

1 英译中

词汇积累

sub-Saharan 撒哈拉沙漠以南的
trajectory（事物的）发展轨迹
grid 电网
off-grid solar 离网太阳能
played-out 过时的，没有影响力的
paternalistic 家长作风的
Sustainable Development Goal (SDG) 联合国可持续发展目标
binary 二元的
International Energy Agency (IEA) 国际能源署
romanticize 使浪漫化
solicitous 关怀的，关切的
from scratch 从零开始
electrification 电气化
mechanization 机械化
rehash 重提，重复
grapple with 解决问题
enshrine 把……记载入
transformer 变压器
from the ground up 从头开始
underpin 巩固，支持

How to Bring Affordable, Sustainable Electricity to Africa (Excerpt)

本篇音频

So right now, nearly one billion people globally don't have access to electricity in their homes. And in sub-Saharan Africa, more than half of the population remain in the dark. So you probably all know this image from NASA. There's a name for this darkness. It's called "energy poverty," and it has massive implications for economic development and social wellbeing. One unique aspect of the energy poverty problem in sub-Saharan Africa—and by the way, in this talk when I say "energy," I mean "electricity"—one thing that's unique about it is there isn't much legacy infrastructure already in place in many countries of the region.① So, for example, according to 2015 data, the total installed electricity capacity in sub-Saharan Africa is only about 100 gigawatts. That's similar to that of the UK. So this actually presents a unique opportunity to build an energy system in the 21st century almost from scratch.

The question is: How do you do that? We could look back to the past and replicate

the ways in which we've managed to bring stable, affordable electricity to a big part of the world's population. But we all know that that has some well-known terrible side effects, such as pollution and climate change, in addition to being costly and inefficient. With Africa's population set to quadruple by the end of the century, this is not a theoretical question. Africa needs a lot of energy, and it needs it fast, because its population is booming and its economy needs to develop. So for most countries, the general trajectory of electrification has been as follows. First, large-scale grid infrastructure is put in place, usually with significant public investment. That infrastructure then powers productive centers, such as factories, agricultural mechanization, commercial enterprises, and the like. And this then stimulates economic growth, creating jobs, raising incomes, and producing a virtuous cycle that helps more people afford more appliances, which then creates residential demand for electricity. But in sub-Saharan Africa, despite decades of energy projects, we haven't really seen these benefits. The energy projects have often been characterized by waste, corruption, and inefficiency; our rural electrification rates are really low, and our urban rates could be better; the reliability of our electricity is terrible; and we have some of the highest electricity prices in the whole world. And on top of all of this, we are now facing the impacts of the growing climate catastrophe head-on.

So Africa will need to find a different path. And, as it turns out, we are now witnessing some pretty exciting disruption in the African energy space. This new path is called off-grid solar, and it's enabled by cheap solar panels, advances in LED and battery technology, and combined with innovative business models.② So these off-grid solar products typically range from a single light to home system kits that can charge phones, power a television, or run a fan.③ I want to be clear: Off-grid solar is a big deal in Africa. I have worked in the sector for years, and these products are enabling us to extend basic energy services to some of the world's poorest, raising their quality of life. This is a very good and a very important thing. However, off-grid solar will not solve energy poverty in Africa, and for that matter, neither will a top-down effort to connect every unserved household to the grid. See, I'm not here to rehash that played-out "on-versus-off-grid" or "old-versus-new" debate. Instead, I believe that our inability to grapple with and truly address energy poverty in Africa stems from three main sources. First, we don't really have a clear understanding of what energy poverty is, or how deep it goes. Second, we are avoiding complex systemic issues and prefer quick fixes. And third, we are misdirecting

concerns about climate change. Combined, these three mistakes are leading us to impose a Western debate on the future of energy and falling back on paternalistic attitudes towards Africa.

So let me try and unpack these three questions. First, what exactly is energy poverty? The main energy poverty targeted indicator is enshrined in the UN's seventh Sustainable Development Goal, or SDG 7. It calls for 100 percent of the world's population to have access to electricity by the year 2030. This binary threshold, however, ignores the quality, reliability, or utility of the power, though indicators are currently being developed that will try and capture these things. However, the question of when a household is considered "connected" is not quite clear-cut. So, for example, last year the Indian Prime Minister declared all of the villages in India electrified, the criteria for electrification being a transformer in every village plus its public centers and 10 percent—10 percent—of its households connected. Meanwhile, the International Energy Agency, which tracks progress against SDG 7, defines energy access as 50 kilowatt hours per person per year. That's enough to power some light bulbs and charge a phone, perhaps run a low-watt TV or fan for a few hours a day. Now, providing entry-level access is an important first step, but let's not romanticize the situation. By any standard, a few lights and not much else is still living in energy poverty. And what's more, these energy poverty indicators and targets cover only residential use. And yet, households account for just about one quarter of the world's electricity consumption. That's because most of our power is used in industries and for commerce, which brings me to my main point: Countries cannot grow out of poverty without access to abundant, affordable, and reliable electricity to power these productive centers, or what I call "Energy for Growth."

As you can see from this graph, there's simply no such thing as a low-energy, high-income country. It doesn't exist. And yet, three billion people in the world currently live in countries without reliable, affordable electricity not just to power their homes but also their factories, their office buildings, their data centers, and other economic activities. Merely electrifying households and micro-enterprises cannot solve this deeper energy poverty. To solve energy poverty, we need to deliver reliable, affordable electricity at scale, to power economy-wide job creation and income growth. This need, however, bumps against an emerging narrative that, faced with climate change, we all need to transition from large, centralized power systems to small-scale distributed power.④ The

growth of off-grid solar in Africa—and let me repeat, off-grid solar is a good thing—but that growth fits nicely into this narrative and has led to those claims that Africa is leapfrogging the old ways of energy and building its power system from the ground up, one solar panel at a time. It's a nice, solicitous narrative, but also quite naive. Like many narratives of technological disruption, often inspired by Silicon Valley, it takes for granted the existing systems that underpin all of this transformation.⑤ You see, when it comes to innovating and energy, the West is working around the edges of a system that is tried and tested. And so all the sexy stuff—the rooftop solar, the smart household devices, the electric vehicles—all of this is built on top of a massive and absolutely essential grid, which itself exists within a proven governance framework. Even the most advanced countries in the world don't have an example of an energy system that is all edges and no center at scale.

So ultimately, no approach—be it centralized or distributed, renewable or fossil-based—can succeed in solving energy poverty without finding a way to deliver reliable, affordable electricity to Africa's emerging industrial and commercial sectors. So, it's not just lights in every rural home. It's power for Africa's cities that are growing fast and increasingly full of young, capable people in desperate need of a job. This in turn will require significant interconnectivity and economies of scale, making a robust and modern grid a crucial piece of any energy poverty solution.

要点评析

这段语料的难度适中，专有词汇以及技术相关背景知识并不是很难，主要难点在于三点：第一个是讲者的口音，虽然这位来自非洲的讲者口音不算很重，但是部分单词和表达的吞音仍然会给口译员带来比较大的挑战。第二点在于讲者一些比较口语化、生动的表达，如all the sexy stuff以及romanticize the situation需要口译员在短时间之内找到合适的中文译文。第三个难点是文中的插入语较多，翻译时需要调整语序、重组语句，这对口译员的认知负荷也会是一个挑战。

① 本句的难点首先在于代词it的翻译，因为本句是接着one unique aspect of the energy poverty problem in sub-Saharan Africa话题继续的，讲者中途插入了对energy的解释，于是在重新讲述的时候用it代替了前文提到的energy poverty

problem，所以我们在翻译时需要将it指代的意思显化。其次，in place本意为“在合适的地方”，在句尾出现会影响口译时的句子顺序，所以可以和already合并译为“已经建好的”。第二个破折号之后的部分可以译为“关于能源贫困问题的一个独特方面是，这个地区的很多国家没有太多已经建好的基础设施”。

② 在音频中，LED and battery technology的连读可能会影响理解，需要迅速反应出LED这个关键词。句中用了enable和combine两个动词并列，enable后面还跟有几个并列名词短语，分开译会显得有些杂乱，因为enable和combine两者意思类似，且combine可以包含enable的意思，所以可以直接将其合并，译为“它的诞生结合了廉价太阳能板，LED和电池科技的发展，以及创新性的商业模型”。

③ 本句的难点在于that从句，that后接的内容是用来补充说明home system kits的，其中的动宾结构也较多，这种情况下调整语序给译者带来的压力较大，因此可以顺句驱动，通过“来”引出下文，译为“这些离网太阳能产品多种多样，从简单的一盏灯到居家系统组件来给手机充电、给电视供能、让电扇运转”。

④ 本句插入语较多，看起来比较零散，但其实可以将however提前后直接顺句驱动，注意bump against在这里的意思为“与……矛盾”，that处理为“那就是”。整句话可以译为“但是，这个需求却和一个渐渐浮现的观点产生了矛盾，那就是，面对当今的气候变化，我们都需要实现从大型、集中式能源系统到小型、分散式能源的转型”。

⑤ 首先本句需要调整语序，将inspired by Silicon Valley提前至narratives之前；其次要把代词it的意思显化译为“这个说法”来代指前文的narrative，technological disruption意为“颠覆性科技”。本句可译为“和很多受硅谷启发所诞生的颠覆性科技的叙述一样，这种说法同样认为，作为这些转型的基础，这些现有系统的存在是理所当然的”。

2 中译英

词汇积累

页岩气　shale gas
煤层气　coalbed methane
装机容量　installed capacity
光伏竞价项目　photovoltaic bid item

贵州省副省长在 2021 年生态文明贵阳国际论坛“绿色清洁能源”主题论坛上的致辞

本篇音频

尊敬的李冶总监，维斗、光溪院士，

各位领导，各位来宾：

大家下午好。值此2021生态文明贵州国际论坛召开之际，非常高兴与大家相聚在多彩贵州，爽爽贵阳，隆重举办“绿色清洁能源”主题论坛，深入探讨绿色清洁能源可持续发展，打造综合能源服务的新业态，分享各国发展绿色低碳能源的实践方法和最新成果，积极推进国际能源合作。借此机会，我谨代表贵州省人民政府向出席论坛的各位领导，各位来宾表示诚挚的欢迎，向关心支持贵州发展的各界朋友表示衷心的感谢。

近年来，贵州坚持以习近平新时代中国特色社会主义思想为指导，深入贯彻落实习近平总书记对贵州工作重要指示精神，牢记嘱托，感恩奋进，牢牢守好发展和生态两条底线。经济社会发展取得了显著的成绩，被习近平总书记赞誉为党的十八大以来，党和国家事业大踏步前进的一个缩影。

贵州能源资源丰富，是全国重要的能源基地和资源深加工基地，具有水火互济、多能互补的特点①。全省煤炭资源保有储量居全国第五位，有江南煤海之称。水电资源位居全国第六位，页岩气、煤层气资源居全国第四位，太阳能、风能经济技术可开发量分别达5,000万千瓦和2,800万千瓦以上。

经过多年的发展，能源产业已经成为贵州重要的支柱产业。去年末，全省电力装机容量达到了7500万千瓦。新能源产业蓬勃发展，水、风、光等绿色清洁能源装机占比超过了50%。2019年、2020年，贵州连续两年成为全国光伏竞价项目规模最大、建设速度最快、并网率最高的省份②。2020年9月，习近平总书记在第七十五届联合国大会一般性辩论上向世界庄严宣布，中国二氧化碳排放力争于2030年前达到峰值，努力争取2060年前实现碳中和，这充分彰显了中国积极应对全球气候变化的坚定决心，展示了中国推动构建人类命运共同体的大国形象，发出了新时代生态文明建设的中国声音，为我们发展绿色清洁能源产业指明了方向，提供了遵循。

“十四五”时期，贵州将深入贯彻落实习近平生态文明思想，按照高质量发展的要求，坚持生态优先，推动绿色发展，做强做优做大现代能源产业③。第一，我们将着力完善绿色清洁能源供给体系，大力推动传统煤电机组节能改造，超低排放、灵活性智能化改造升级，努力提升化石能源清洁高效利用的综合水平。加快页岩气、煤层气的勘探开发利用，大力实施新能源倍增工程，推动风光水火储一体化，多能互补高质量

发展④。“十四五”期间预计全省太阳能风能等新能源装机容量年均增长30%，到期末预计全省新能源装机总量将超过4,000万千瓦。

第二，加快构建绿色清洁能源消费机制，围绕“双碳”目标，科学合理控制能源消耗的总量，深化清洁能源替代及资源循环利用，加快源网荷储一体化发展，完善新能源市场电力市场化交易的机制，加大抽水储能项目可用升级的力度，大力推广使用高效节能技术，推动智慧高效用能，营造全社会节约利用能源的良好氛围⑤。

第三，巩固强化绿色清洁能源发展基础，建设可靠可控的城市配电网、低压透明电网，升级农村配电网，加快全省充电基础设施建设，持续提升新能源综合保障水平，积极推动能源与大数据深度融合发展，扩大能源数字化试点示范项目建设，鼓励共享智慧能源新经济发展，努力打造国家新型综合能源基地和国家数字能源基地。

各位领导，各位来宾，本次论坛以“‘双碳’目标下的能源转型发展之路”为主题，希望大家充分利用难得的机遇，共推绿色能源交流合作，共促能源产业转型升级，共享绿色能源发展成果，努力为“双碳”任务的如期完成贡献力量。最后预祝本次论坛取得圆满成功，谢谢大家。

要点评析

这篇语料主要讲的是科技政策，所以并没有出现特别专业的科技术语与背景知识。但是一些四字词语，以及“江南煤海”之类的表达会给口译员带来一定压力；同时，一些较长的句子会连续出现多个动词，这对于口译员的动词驾驭能力也会有一定挑战。此外，讲者开始对数位专家和领导的尊称，也需要口译员提前熟悉出席会议的嘉宾全名，以便准确应对。

① “水火互济、多能互补”的中文内涵可能很多人都不太理解，查阅资料后得知是指“在受到气候和季节等因素影响时，不同类型的能源可以进行互补，保证电力供应的稳定”。除了术语难点之外，在翻译的过程中可以将上下文通过分词做后置定语连接起来，用complementing each other in particular hydroelectric power and thermal power来修饰前面的multiple sources of electricity，使译文更简练。

② 这句话可以按照原文顺序译为In the years 2019 and 2020, Guizhou became the province with the largest scale of photovoltaic bid items, the fastest construction speed, and the highest grid connection rate for two consecutive years。这句话没有错，但是2019和2020已经传达了“两年”这个信息，句尾如果再重复一次

for two years，会有点冗余，所以译文可简化为for the years 2019 and 2020 in a row，只在句尾出现一次，将“两年”之意隐含其中。

③ 本演讲中有很多典型的中式表达，比如流水句的并列。在翻译的过程中，不建议把每个句子简单机械地并列在一起，而是应该发掘句子内在的逻辑关系。中英两种语言的主要差异之一在于逻辑关系是否显化。这个例句中的“做强做优做大现代能源产业”在中文中虽然是并列的形式，但是从逻辑层面看，其内容应该是前面几项措施的目的，因此在翻译时应当把这层关系表达出来。

④ 本句句首缺乏主语，在译文中增加了主语we。本句中的“倍增工程”是一个具有中国特色的词汇，它的意思是指将新能源工程加倍建设，在翻译的过程中把名词译成了动词multiply，保留了句子的核心意思。这句话中的专业术语较为密集，页岩气（shale gas）和煤层气（coalbed methane）需要在笔记中快速记录。“风光水火储”，即wind, solar, hydro, fire, and storage，对于译者笔记的压力较大，这里就需要译者对于能源类型有基本了解，才能在短时间内通过内容联想还原信息内容。

⑤ 这篇讲稿还有一个特点是词语的重复使用，尤其是“推动”“加强”“加快”等。在翻译的过程中应当多样化地选择用词和搭配，使译文变得丰富多彩，比如，“推动”可译为advance、promote、push forward/ahead，“加强”可译为strengthen、reinforce、redouble our efforts to，“加快”可译为accelerate、speed up。