China invests in the EU green transition

By Daniela Bobeva, *professor of international economics at the Institute for Economic Research at the Bulgarian Academy of Sciences, Former Deputy Prime Minister of Bulgaria*

China plays a crucial role for the European Union's ambitious goals for greening the economy. There are three ways of doing this – be exporting equipment for renewable energy production, by selling electric cars and other electrical vehicles, as well as providing direct investment in green industries and projects in the EU.

EU sets rather ambitious green goals which it cannot achieve alone

On 12 December 2015, Parties to the United Nations Framework Convention on Climate Change reached an agreement (Paris Agreement) to combat climate change and to accelerate and intensify the actions and investments needed for a sustainable low carbon future. This includes reducing greenhouse gas emissions by 40% by 2030 compared to levels in the 1990s, and becoming carbon neutral by 2050. All countries try to cope with this ambitious task although COVID-19 crisis and recent geopolitical turmoil challenge the achievement of this goal and reaching the deadline.

The EU started an ambitious Green Transition by signing so called European Green Deal on 11 December 2019. This is a growth strategy aiming to make Europe the first climate neutral continent by 2050. The main tool to achieve this goal is the European Green Deal Investment Plan, which is intended to mobilise at least €1 trillion of sustainable investments over the next decade. Both public and private investments will be financed for the transition to a climate-neutral, green, competitive and inclusive economy. Energy is one of the largest carbon dioxide producer. That is why decarbonisation of energy sector is considered in the EU as one of the main directions of Green Transition.

The ambitious goal of the transition is positively perceived by the EU citizens unless the energy security is not jeopardised. The businesses across Europe expect a lot of grant funding for their restructuring and energy efficiency plans. Therefore, we have everything what we need: the financing, the positive attitude by society, and the investment intentions by the businesses. What we do not have though are all the alternative technologies, which could substitute the intensive carbon emission production lines. In spite of generous grants for research and innovations in the EU those new technologies are not ready now. Chinese approach is rather different. It emphasises on the trinity of China's green transition: policy, science and economy. The green transformation process in China is gradual and well planned adjusted to the country's specific economic structure. The substitution of fossil is gradual while the focus is on the reduction of the use of natural resources.

Both EU and China opt for inclusive green transition that involve all stakeholders and the entire society that everyone benefits.

One of the few available alternatives of the fossil energy is the renewable energy sector. The share of energy from renewable sources include wind power, solar power (thermal, photovoltaic and concentrated), hydro power, tidal power, geothermal energy, ambient heat captured by heat pumps, biofuels and the renewable part of waste. In 2021, renewable energy represented 21.8 % of energy consumed in the EU.

Daniela Bobeva

Daniela Bobeva is a professor of international economics at the Institute for Economic Research at the Bulgarian Academy of Sciences. Lecturer in international economics at five universities. Her professional experience is mostly in the banking and financial sector. She served for twelve years as Director at the Bulgarian National Bank. She was vice president of the Black Sea Bank for Trade and Development, a multilateral development bank. Professor Bobeva also is consultant to the OECD, Paris and the World Bank. In 1997, she was Minister of Trade and Foreign Economic and in 2013 she became Deputy Prime Minister for Economic Development. She has over 140 scientific publications.

Chinese exports of green equipment grows

While the demand for the equipment for all those renewable energy projects is huge, the EU is confronted to the deficit of capacity to produce that equipment. This situation is resolved to a large degree by China. The energy prices turn attractive for the investors in photovoltaic, wind and hydropower capacities. That is why in the last post COVID-19 years the EU green transition is driven mainly by those real investments.

The EU continued investing in solar energy. In 2021, it achieved 33% growth of the installed capacity adding 31.8 GW solar capacity. China keeps its market leadership in new solar capacity. In 2021 alone China added 54.9 GW of new solar installations.

The global solar power market size expands to USD 234.86 billion in 2022. China was the largest origin of imports of wind turbines (64% import of all turbines) and solar panels in the EU (89% of total import of panels). The imported solar panels reached euro 9.8 billion, liquid biofuels to the value of €3.4 billion and wind turbines worth €0.6 billion. The forecasts suggest that if the trend continues China will increase its global market share to 95% by 2025.

Investing together in our green future

The EU Green Transition means decarbonisation of European energy system largely by increasing wind and solar power generation. However, there are already fears that the advancement of the process strongly depends on the security of supplies from China. This concerns mainly the manufacturing of wind turbines and solar PV panels.

Does the dominance of China in the import of equipment for renewable energy mean that EU increases its economic dependency and particularly the success of green transition by China's economy?

Green transition requires common actions but most importantly cooperation. It is not an EU green transition or China's green transition; this is our joint effort to save the climate and the nature. It is a civilizational choice to make it and anyone who contributes have to be welcomed.

Protectionism does not work for the green transition

Despite the ambition to speed up the green transition (which is mainly renewable energy and solar energy), in 2012 the European Union followed the United States' example imposed anti-dumping tariffs on solar panel imports from China. The aim was, as every protectionism, to encourage local production of this key tool for decarbonizing the economies instead of importing. The restrictions were dismissed in 2018. This episode deserves attention.

Since China succeeds is producing solar photovoltaic equipment the import is reasonable option to enabling the transition away from fossil fuels. The lesson from 2012 though showed that developing the local industry may not be competitive alternative and in terms of pricing this could further make the green transition more expensive and more time consuming. Furthermore, the demand for such equipment is very high and the EU companies cannot satisfy the growing demand. Some studies show that the competitive import of Chinses equipment constituted a positive push for more innovation among European solar innovators, calling into question the rationale behind the trade war. The reduction of the cost of solar equipment in EU was broadly driven by cheaper import of Chinese technologies.

China brings competition to the EU market of electric cars

The main reason for slow decarbonisation of the European transport sector is the high price of the electric cars. Chinese electric cars have some advantages, i.e. 653 horsepower, faster start and one drive could reach up to 700 kilometers (with the biggest battery capacity). The price is about euro 70 thousand which is a competitive price in the EU market.

The Chinese electric cars' production makes a progress in overcoming the other limitation of the use of electric cars – the long process of charging. The idea is to build battery changing stations where the customers instead of charging for hours could replace the empty battery with a charged one. Doing this the users will save a lot of time and drive faster. Few replacement units are already constructed in Germany.

About 20 Chinese electric cars producers are targeting the EU car market. This supply will challenge the EU car producers to make faster progress in reducing the price but still one of the main reason for price competitiveness of Chinese cars is the low price of batteries. Another reason is that European manufacturers are suffering from a shortage of parts and chips due to problems in the supply chain. There are though plans for more EU investment in the battery production and local supply of parts. Growing competition will make the market enlarging. More Europeans will have access to e-cars and the winner is the green transition and the reduction of carbon emissions from cars which is one of the main contributor to the carbon emissions in Europe.

China leads cross border investment in solar energy

Not only is China today the world's largest producer of solar panels, wind turbines, batteries and electric vehicles, but it has also been the top investor in clean energy for nine out of the last ten years, according to the Frankfurt School of Finance and Management. Since 2014, Chinese equity investment has supported a total of 12,622 megawatts (MW) of wind and solar projects in South and Southeast Asia alone, according to new research by Greenpeace.

Chinese investment abroad are getting greener. refocus from fossil fuels to renewable energy is a net positive for a myriad of reasons: protecting scarce resources, cutting carbon emissions that spur global warming, and boosting energy security by reducing reliance on costly fuel imports. While only a hatful of nations boast significant oil and gas reserves, nearly all have the potential to develop clean energy themselves, whether via solar, wind, tidal, geothermal or hydroelectric plants, mitigating geopolitical tensions by making the world less dependent on restive regions like the Middle East.

Belt and Road Initiative becomes more green

Ten years of the Belt and Road initiative is a good occasion to look at the achievement and challenges. It is an important driver of investment in the South East Europe – a region with crucial importance for the EU. Some countries are already members of the EU while all others have inspirations to join the Union. The economic growth of the relatively small and open economies in the SEE region (with the exception of Turkey) is highly dependent on the inflow of foreign direct investment. These countries are not particularly rich in raw materials, suffer from chronic political instability, their market and population are small. All this makes the region unattractive to the foreign investors while the local investments are weak. Chinese investment is a powerful stimulus for these economies. The belt and road initiative has enabled the implementation of large-scale projects with high economic potential.

While at the beginning of the initiative, there were some investments in the fossil sector recently there is a clear tendency of greening Chinese investment in the countries participating the belt road initiative. An important step in supporting the green transition are Chinese investments in wind and solar electricity parks in Montenegro, Serbia, Bulgaria, and Turkey. The markets of those countries are opened for foreign investment and the Chinese investment is welcome.

In addition to the equipment and technologies, some of those projects involve also Chinese financing which is an efficient tool to make the investment efficient. The region has significant unutilized potential for green investment not only in the energy sector. The enterprises need restructuring in order to meet the decarbonisation goals since most all countries in the region signed the Paris Agreement.

China is ambitious but in the same time realistic in doing green transition at home. China contributes to the supplies, investment and achieving the green economy in the countries participating the Belt and Road initiative. It is time to learn the lessons from the past 10 years and continue the initiative with more green investments. This is a joint top priority for China and the participating countries.

欧盟绿色转型之路上的中国投资

中国在欧盟雄心勃勃的绿色经济目标中扮演着至关重要的角色。具体来讲包括三个方面的内容：出口可再生能源生产设备、销售电动汽车和其他电动车辆，以及向欧盟的绿色产业和项目提供直接投资

文 | 丹耶拉·波贝娃（Daniela Bobeva） 保加利亚科学院经济研究所教授、保加利亚前副总理　　**翻译** | 王晓波

欧盟制定了颇具雄心的绿色目标，但仅靠它自身是无法实现的

2015 年 12 月 12 日，联合国气候变化框架公约的参与方达成了一项协定（即巴黎协定），其目的是应对气候变化，加快和加强为可持续的低碳未来的需要采取行动和进行投资。其中包括与 20 世纪 90 年代相比，到 2030 年，温室气体排放量减少 40%，到 2050 年实现碳中和。尽管新冠肺炎疫情和最近的地缘政治动荡对在约定的期限内实现这一目标构成了挑战，但所有国家都在努力完成这项艰巨的任务。

欧盟于 2019 年 12 月 11 日签署了所谓的“欧洲绿色协议”，开启了其雄心勃勃的绿色转型。这是一项发展战略，旨在到 2050 年使欧洲成为第一个气候中立的大陆。实现这一目标的主要手段是欧洲绿色交易投资计划，它打算在未来十年能够动用至少 1 万亿欧元的可持续投资。公共和私人投资都可以向气候中立、绿色、竞争和包容性经济的转型提供资金。能源领域是二氧化碳最大的制造者之一。这就是为什么欧盟认为能源领域的脱碳是绿色转型的一个主要方向。

只要能源安全不受到威胁，欧盟民众对转型这一宏伟目标持积极态度。欧洲各地的企业也都期望能够获得大量的赠款，用于其重组和能源的效能计划。因此，我们拥有采取行动所需的一切：融资、社会面的积极态度和企业对投资的意愿。然而，我们没有的是所有替代技术，它们可以替代密集的碳排放生产线。尽管欧盟为研究和创新提供了慷慨的资助，但这些新技术目前还没有准备到位。中国的做法截然不同。它强调其绿色转型要做到三位一体：政策、科学和经济。中国的绿色转型过程是渐进的，并且根据国家的具体经济结构进行了精心规划。对化石能源的替代也是逐渐的，它将重点放在了减少对自然资源的使用。

欧盟和中国都选择了包容性绿色转型，这就涉及到所有利益相关者和整个社会，并且能使每个人都从中受益。

可再生能源是为数不多的化石能源的替代品之一。可再生能源包括风能、太阳能（热能、光伏和光热）、水力发电、潮汐能、地热能、热泵捕获的环境热量、生物燃料和废物中可再生的部分。2021 年，可再生能源占欧盟能源消费的 21.8%。

丹耶拉·波贝娃（Daniela Bobeva）

保加利亚科学院经济研究所的国际经济学教授，曾在保加利亚国家银行担任了 12 年的董事。波贝娃教授还担任过黑海贸易与发展银行的副总裁，这是一家多边开发银行。她也是经合组织、巴黎和世界银行的顾问。1997 年，她担任保加利亚贸易与对外经济部长 2013 年，她成为保加利亚负责经济发展的副总理。她的科学出版物有 140 多篇。

中国绿色设备的出口在增长

所有这些可再生能源项目对设备的需求都非常大，但欧盟面临着生产这些设备的能力不足的现实。这种情况在很大程度上可以由中国来解决。可再生能源的价格对光伏、风能和水力发电的投资者极具有吸引力。这就是为什么在新冠肺炎疫情爆发后的最近几年，欧盟的绿色转型主要是靠这些实际投资推动的。

欧盟持续对太阳能进行投资。2021 年，其装机容量增长了 33%，新增了 31.8 千兆瓦的太阳能容量。中国在新增太阳能发电方面始终保持市场领先地位。仅 2021 年，中国就新增了 54.9 千兆瓦的太阳能装机容量。

2022 年，全球太阳能市场的规模已经扩大到 2348.6 亿美元。中国是欧盟最大的风力涡轮机（占所有涡轮机进口的 64%）和太阳能板（占太阳能板总进口量的 89%）的进口国。欧盟从中国进口太阳能板的总值达到 98 亿欧元，液体生物燃料的总值达到 34 亿欧元，风力涡轮机的总值也达到 6 亿欧元。预测显示，如果这一趋势继续下去，到 2025 年，中国占全球市场的份额将扩大到 95%。

共同投资我们的绿色未来

欧盟绿色转型意味着欧洲能源系统的脱碳主要依靠的是增加风力和太阳能发电。然而，已经有人担心，这一进程的进展在很大程度上要取决于中国供应的安全。它主要涉及风力涡轮机和太阳能光伏板的制造。

中国在可再生能源设备进口方面的主导地位是否意味着欧盟增加了对其的经济依赖性，特别是欧盟绿色转型的成功是否要依靠中国经济?

绿色转型需要共同行动，但最重要的是合作。这不是欧盟的绿色转型，也不是中国的绿色转型，这是我们拯救气候和自然的共同努力。它是一个文明的选择，任何能够为此做出贡献的国家都应该受到欢迎。

保护主义不利于绿色转型

欧盟雄心勃勃地想加快绿色转型（主要是可再生能源和太阳能），但 2012 年，它仍追随美国的做法，对从中国进口的太阳能板征收了反倾销关税。与所有保护主义一样，其目的是鼓励本地生产这一能使经济脱碳的核心工具，而不再依赖进口。关税在 2018 年被取消，但这件事值得引起关注。

由于中国成功地生产出了太阳能光伏设备，因此从其进口是实现从化石燃料转型的合理选择。2012 年的教训表明，发展本地产业可能不是一个具有竞争力的选项，而且在定价方面，它可能会使绿色转型变得更加昂贵和耗时。此外，对此类设备的需求非常大，欧盟的公司无法满足日益增长的需求量。一些调查显示，进口具有竞争力的中国设备对欧洲太阳能创新者实现更多创新起到了积极的推动作用，这就令人对支撑贸易战的合理性产生了质疑。欧盟太阳能设备的成本之所以能够降低，主要得益于中国技术的廉价进口。

中国给欧盟电动汽车市场带来竞争

欧洲交通部门的脱碳缓慢的主要原因是电动汽车的价格高昂。中国的电动汽车具备一些优势，包括 653 马力、启动速度更快，以及一次驱动可行驶 700 公里（在电池容量最大的情况下）。它的价格约为 7 万欧元，这在欧盟市场上是一个颇具竞争力的价格。

中国电动汽车的生产在克服电动汽车在使用时遇到的另一个制约因素方面也取得了进展——即漫长的充电过程。它的具体做法就是建立电池更换站，这样用户不用花数小时充电，直接用充好电的电池更换空电池就行了。这一做法可以节省用户的大量时间，行驶速度也更快。德国已经建造了少数这样的替换设施。

大约 20 家中国电动汽车生产商已经瞄准了欧盟的汽车市场。它们的进入将迫使欧盟的汽车制造商们加速降低其汽车价格，而中国汽车具有价格竞争力的一个主要原因是电池价格低。另一个原因是，由于供应链问题，欧洲的制造商们正饱受零部件和芯片短缺的困扰。不过，欧盟计划在电池生产和当地零部件供应方面进行更多投资。竞争的加剧能够使市场扩大。更多的欧洲人将开始使用电子汽车，而赢家则是绿色转型和减少汽车的碳排放，后者是造成欧洲碳排放的一个主要因素。

中国引领太阳能跨境投资

法兰克福金融管理学院提供的数据表明，中国不仅是当前世界上最大的太阳能板、风力涡轮机、电池和电动汽车的生产国，而且在过去十年的九年里，它还是清洁能源的最大投资国。绿色和平组织的最新调查也显示，自 2014 年以来，仅在南亚和东南亚，中国的股权投资就支持了总计 12622 兆瓦的风能和太阳能项目。

中国在海外的投资越来越朝着环保的方向发展。从化石燃料转向可再生能源是一项绝对积极的举措，它的原因有很多：保护稀缺资源、减少导致全球变暖的碳排放、减少对昂贵燃料进口的依赖，从而确保能源安全。虽然只有少数国家拥有大量的石油和天然气储量，但几乎所有国家都具备自己开发清洁能源的潜力，无论是借助太阳能、风能、潮汐能、地热还是水力进行发电。这样做还可以减少世界对中东等动荡地区的依赖，缓解地缘政治的紧张局势。

“一带一路”倡议变得更加绿色

“一带一路”倡议提出 10 年了，现在是一个总结其成就和挑战的好时机。它是东南欧投资的一个重要驱动因素，而东南欧对欧盟来说是一个至关重要的地区。一些国家已经是欧盟成员国，所有其他国家也都有加入欧盟的意愿。东南欧地区的国家都属于规模相对较小和开放的经济体（土耳其除外），其经济增长高度依赖外国直接投资的注入。这些国家没有特别丰富的原材料，政治长期不稳定，市场和人口也都很小。所有这些现实因素使得该地区对外国投资者没有吸引力，而当地的投资又很薄弱。中国的投资对这些经济体来说是一个强有力的刺激。“一带一路”倡议使具有高经济增长潜力的大型项目得以实施。

虽然在“一带一路”倡议刚提出时，对化石燃料行业有过一些投资，但近年来，对于参与“一带一路”倡议的国家，中国的投资趋势已经明显地转向绿色经济。支持绿色转型的一个重要举措是中国对黑山、塞尔维亚、保加利亚和土耳其的风能和太阳能发电园区的投资。这些国家的市场对外国投资开放，中国投资受到欢迎。

除了设备和技术，一些项目还涉及中国融资，它是提高投资效率的有效方式。该地区不仅在能源领域有巨大的未被利用的绿色投资潜力，而且由于大多数国家签署了巴黎协定，因此企业需要重组，以实现脱碳目标。

中国在国内既雄心勃勃又实事求是地进行着绿色转型，与此同时，它也对“一带一路”倡议的参与国提供供应和投资，助力其实现绿色经济。现在是时候总结过去 10 年的经验教训，并以更多的绿色投资继续这一倡议。这是中国和参与国共同的优先考量。