



企业与产品的碳中和

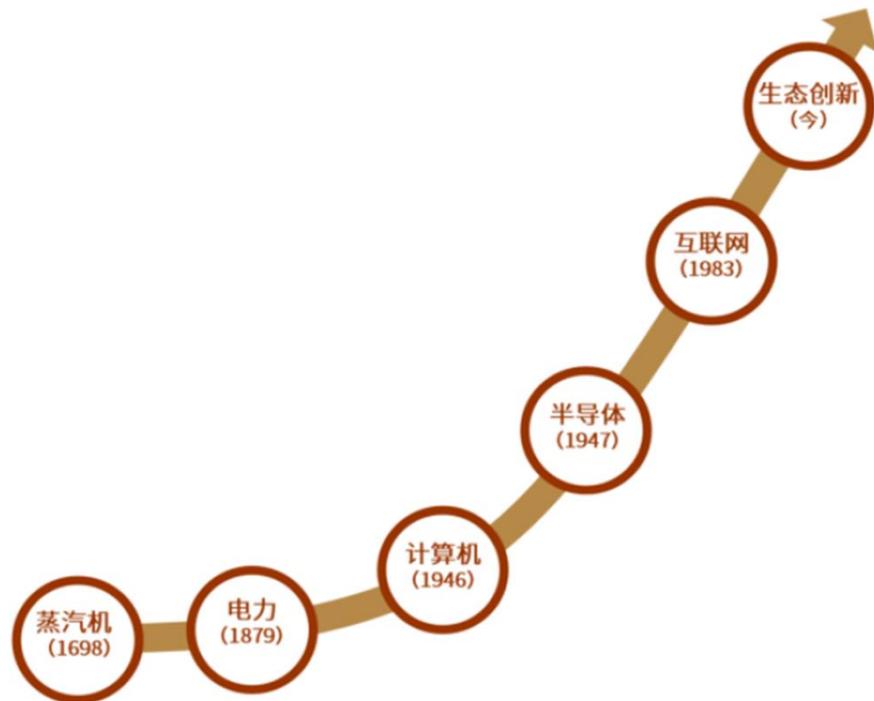
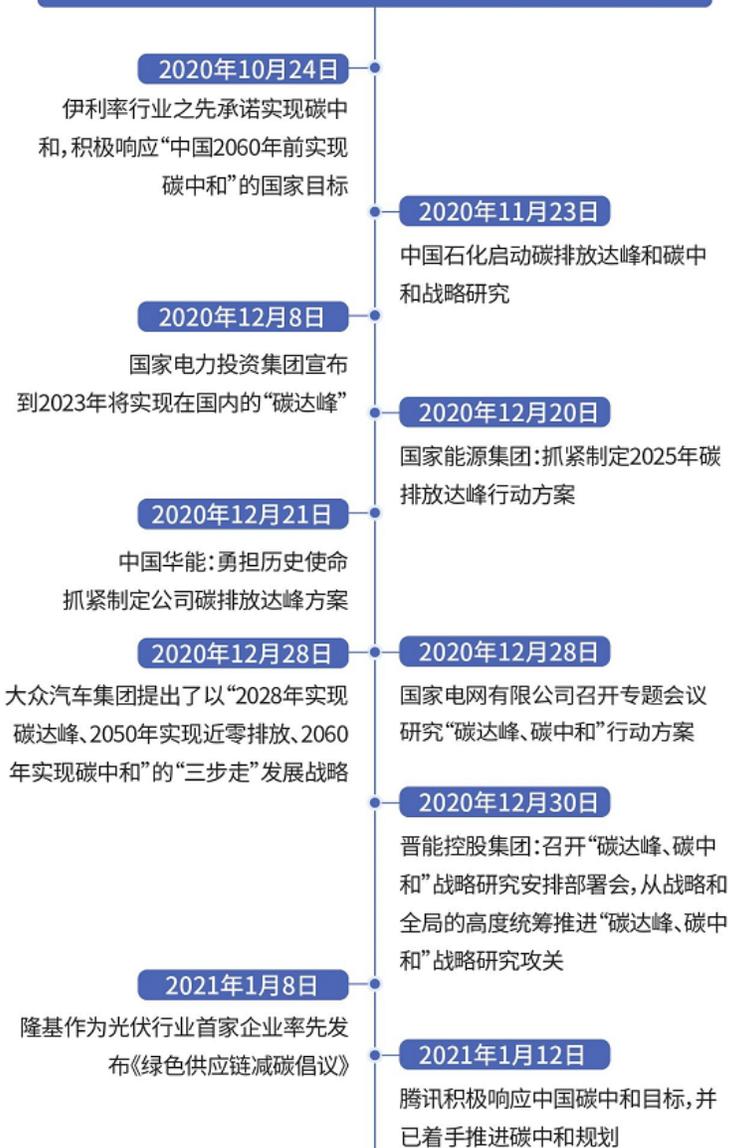
The Carbon Neutrality for Corporations and Products

邱林

Dr. Lin Qiu

我国企业碳达峰与碳中和承诺

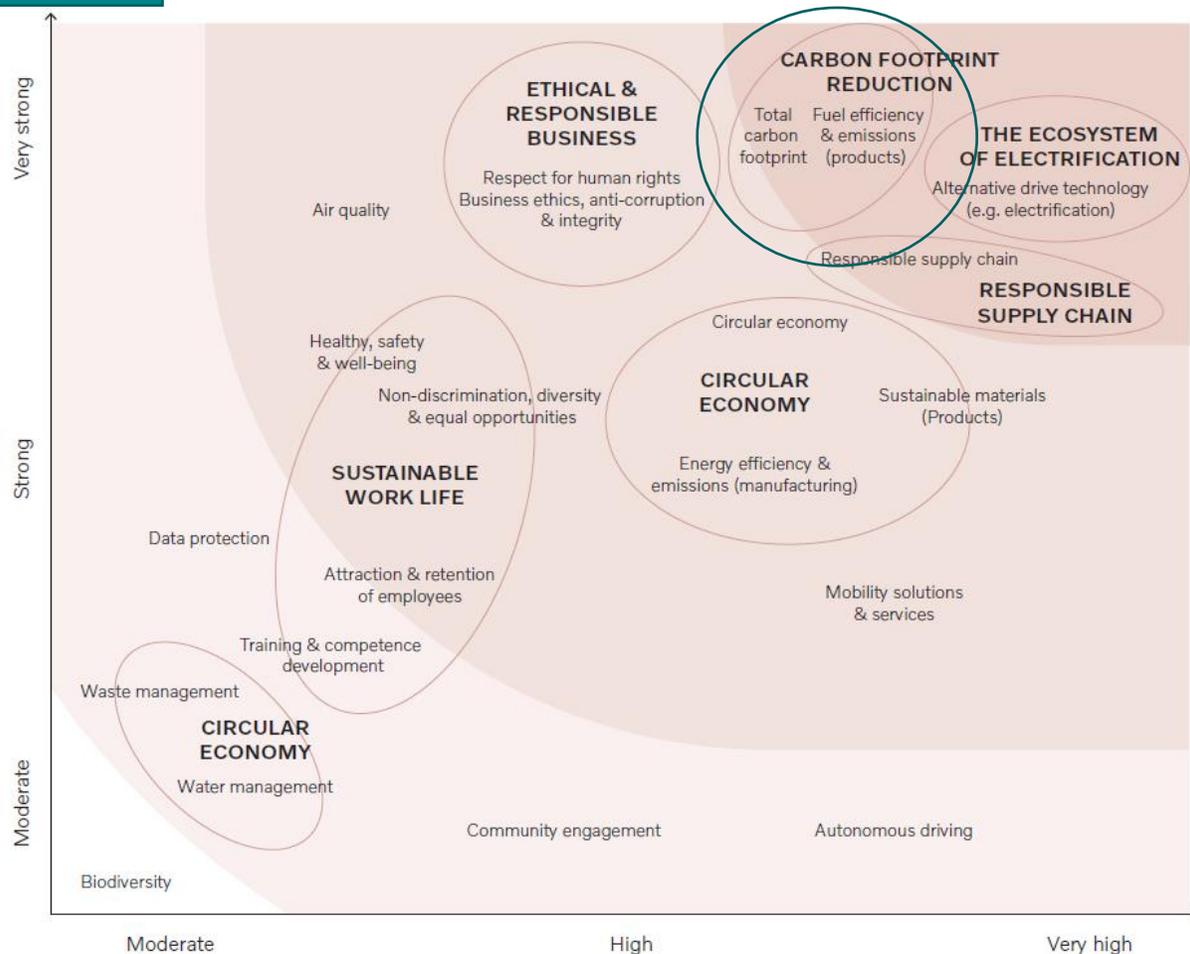
各行企布局达峰中和,低碳转型按下加速键



共同构建人与自然生命共同体

企业可持续发展的重要领域

对利益相关方的影响



1.减少碳足迹

2. 建设电气化的生态系统

3. 有道德有责任的经营

4. 负责任的供应链

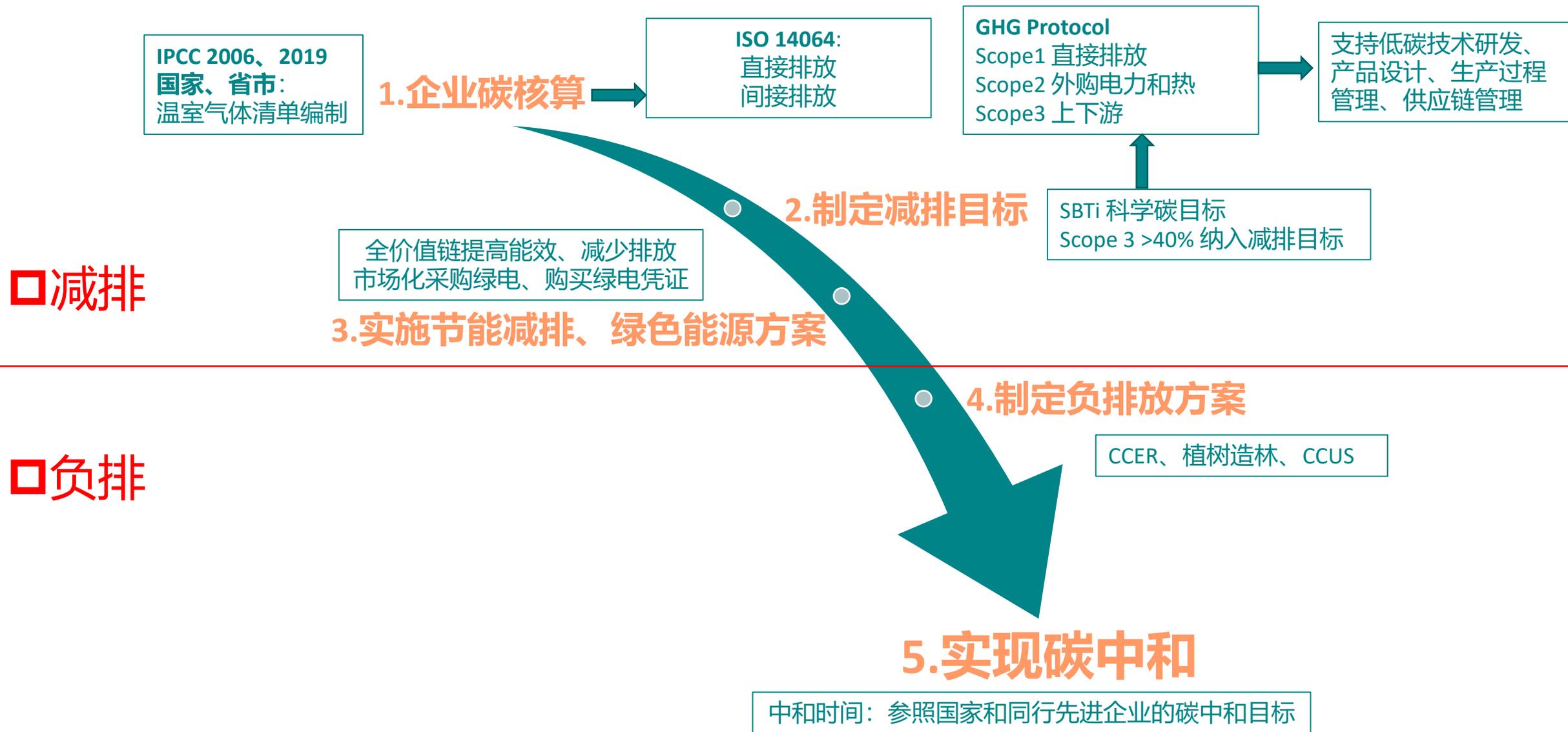
5. 循环经济（能效和废弃物管理）

6. 员工可持续的工作生活

特斯拉在2020年的净利润为7.21亿美元，特斯拉出售碳积分就有15.8亿美元的收入。

对生意的影响

企业实现“碳中和”分几步走



某汽车集团碳排放

ENVIRONMENTAL DIMENSION

Carbon Footprint ¹⁾ (t CO ₂ e)		2019	2018
Total emissions		38,159,000	37,307,000
Total emissions per vehicle ²⁾		54.1	55.9
Scope 1 (Direct GHG emissions)	Company facilities	84,000	80,000
	Company vehicles	12,000	12,000
	Total	96,000	92,000
Scope 2 (Indirect GHG emissions)	Purchased electricity, steam, heating and cooling for own use	191,000	159,000
	Total	191,000	159,000
Scope 3 (Upstream indirect GHG emissions)	Purchased goods and services	11,902,000	11,286,000
	Transportation and distribution	680,000	596,000
	Waste generated in operations	7,000	7,000
	Business travel	75,000	100,000
	Employee commuting	39,000	39,000
	Total	12,703,000	12,028,000
Scope 3 (Downstream indirect GHG emissions)	Transportation and distribution	221,000	296,000
	Use of sold products	24,295,000	24,114,000
	End of life treatment of sold products	458,000	434,000
	Retailers	195,000	184,000
Total	25,169,000	25,028,000	
Tailpipe emissions per car ²⁾		34.5	36.1
Supply chain emissions per car ²⁾		16.9	16.9
Operations emissions per car ²⁾		2.8	2.9

范围 1: 0.25%
范围 2: 0.50%
范围 3: 99.25%

SBTi 目标：该集团承诺，以2019年为基础，到2030年将范围1和2温室气体绝对排放量减少60%。范围三销售产品的每公里行驶减少52%温室气体排放。

2040 年供应商将实现零排放

该集团宣布2040年其供应商将实现零排放计划2018年 – 2025年期间供应链的排放削减25%。目前，该集团的全球供应商呼吁建立碳中和供应链

碳边境税已来

- 2021年3月10日，欧洲通过设立“碳边界调节机制”（CBAM, Carbon Border Adjustment Mechanism）的决议。CBAM，俗称碳关税，即要求进口或出口的高碳产品缴纳或退还相应的税或碳配额。同时，拜登政府正在考虑征收“碳边境税”或“边境调整费”。
- 欧盟对于来自气候目标要求较低国家的进口商品必须征税，以保证一个更加公平的竞争环境，为了保护境内遵守严格气候政策的企业的竞争力。
- 欧盟的碳边境调节机制将适用于所有的进口商品。



对EPD的强制要求

OPEN POWER FOR A BRIGHTER FUTURE.

WE EMPOWER SUSTAINABLE PROGRESS.

SUSTAINABILITY REPORT 2019

Consolidated Non-financial Statement (NFS) prepared in accordance
with Italian Legislative Decree 254/16_year 2019



Circular economy

The Enel Group has begun to implement a “Circular Procurement” strategy for the purchase of goods, works or services to minimise and/or avoid negative environmental impacts and waste creation during their life cycle.

The strategy is based on three key pillars:

1) involving suppliers: developing a reward system by adopting specific instruments in the tender phase to encourage a commitment to the circular economy;

2) establishing metrics and KPIs: quantifying, evaluating and validating environmental KPIs resulting from a product's manufacturing cycle;

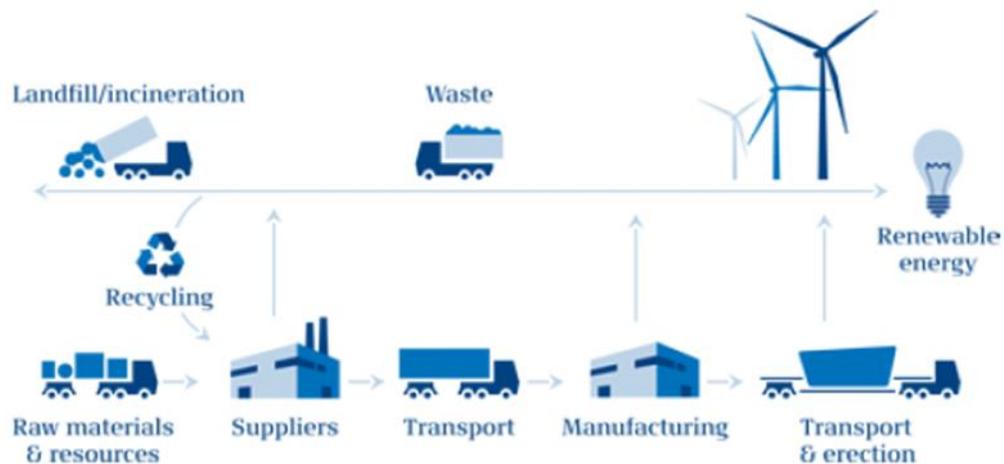
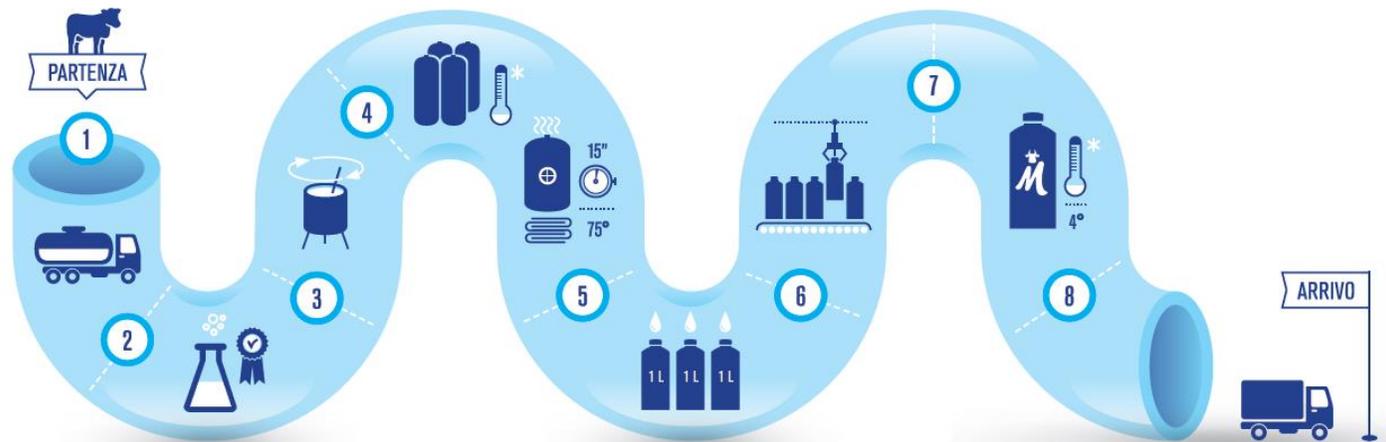
3) co-innovation: launching co-innovation projects together with suppliers in order to review production processes and/or amend purchase methods in accordance with circular economy models.

The “Circular Economy Initiative for Suppliers' Engagement” project involves about 200 suppliers globally in 12 merchandise categories, which currently account for more than 60% of spending for the purchase of materials. The initiative is based on adopting the Environmental Product Declaration (EPD) with the aim of quantifying, certifying and objectively communicating the impacts generated throughout the supplies' lifecycle (water consumption, CO₂, impact on soil, etc.).

Lastly, by adopting a dedicated IT tool (the Circular Supplier Tool), it is possible to aggregate data and set industry benchmarks and improvement targets.

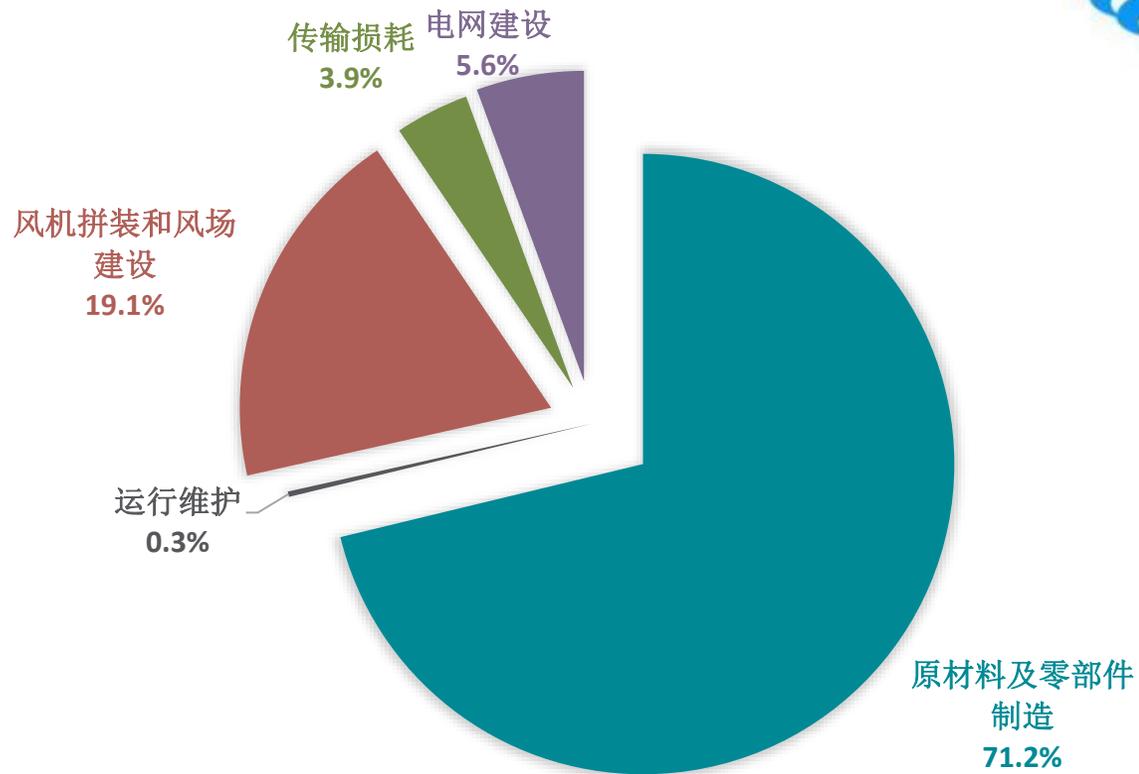
□ 从2019年开始，意大利国家电力公司（ENEL）逐渐要求其200家供应商提供产品的EPD声明。

实现产品碳中和— 首先了解产品的碳足迹



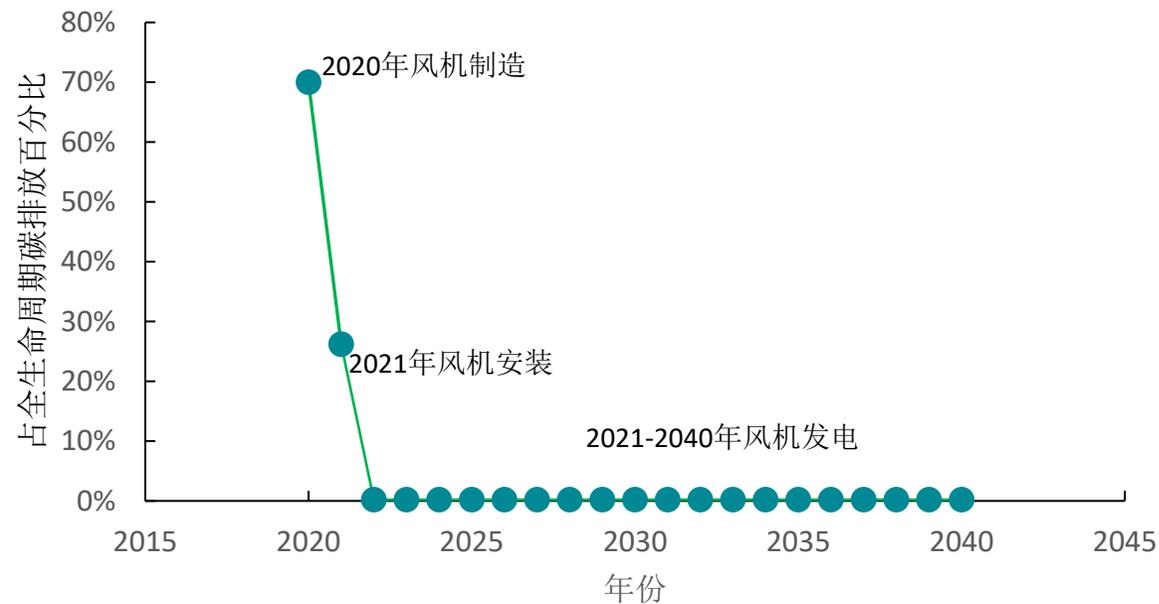
- “Environmental Product Declaration” (EPD), “环境产品声明”, 也称Ⅲ型环境声明, 是基于ISO14025《环境标志与声明-Ⅲ型环境声明-原则和程序》进行的一项国际公认的报告。声明中有很**详细的产品碳足迹信息**。

金风155-4.5MW风机 全生命周期碳足迹



7.25g CO₂-eq/kWh, 20年

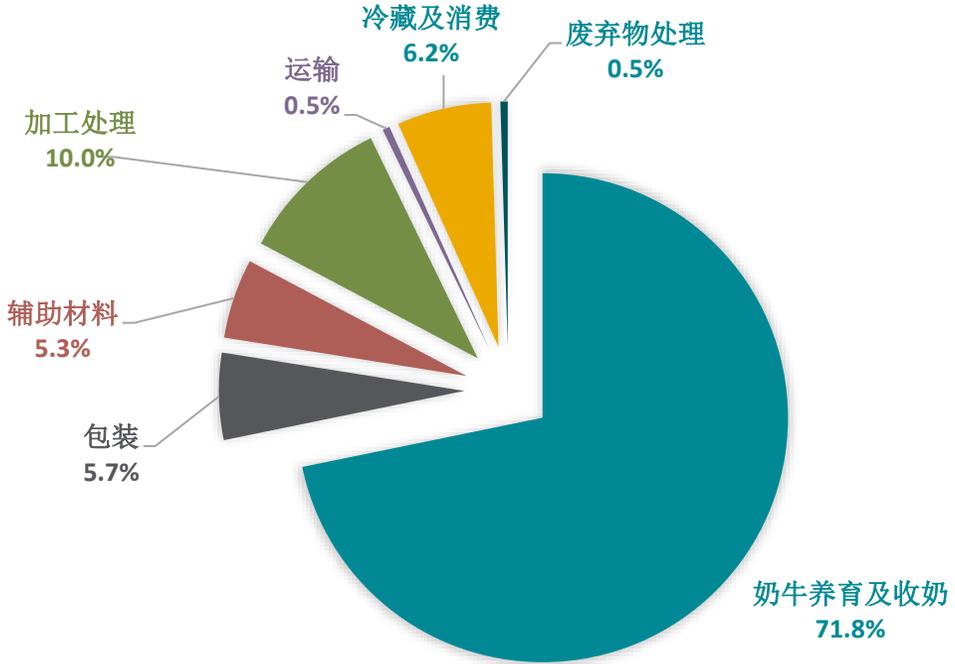
4.5MW 风机碳排放情况假设



有机牛奶碳足迹



EPD®
ENVIRONMENTAL PRODUCT DECLARATION



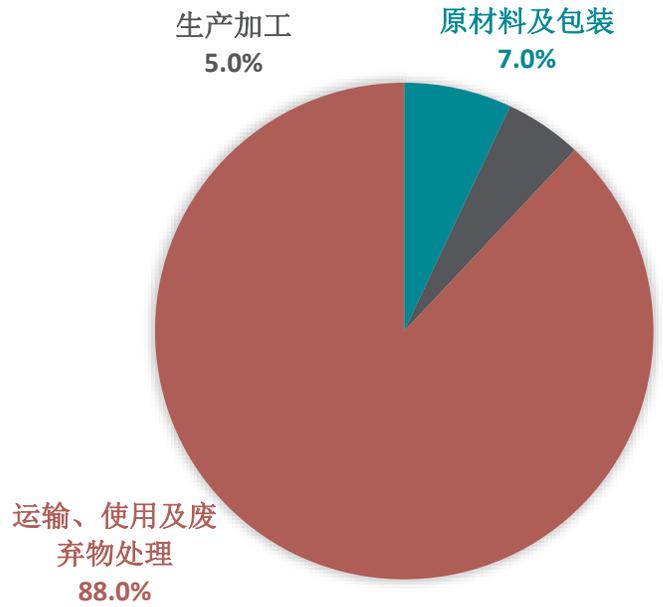
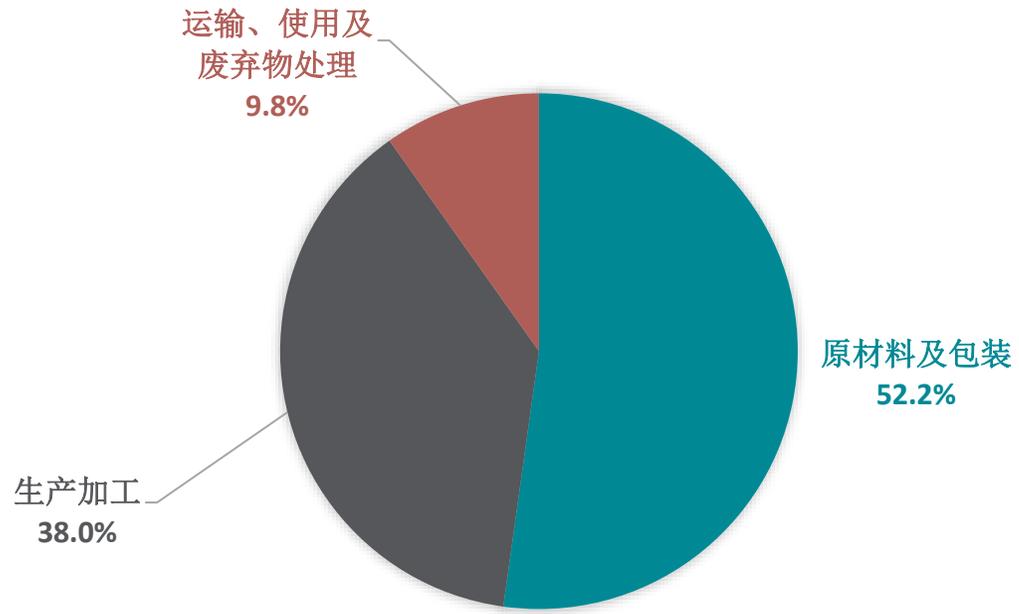
2.4 kg CO₂eq/L

洗发水的设计与碳足迹



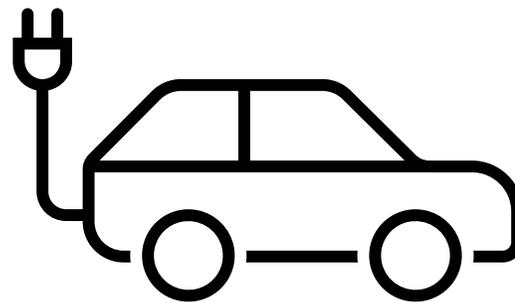
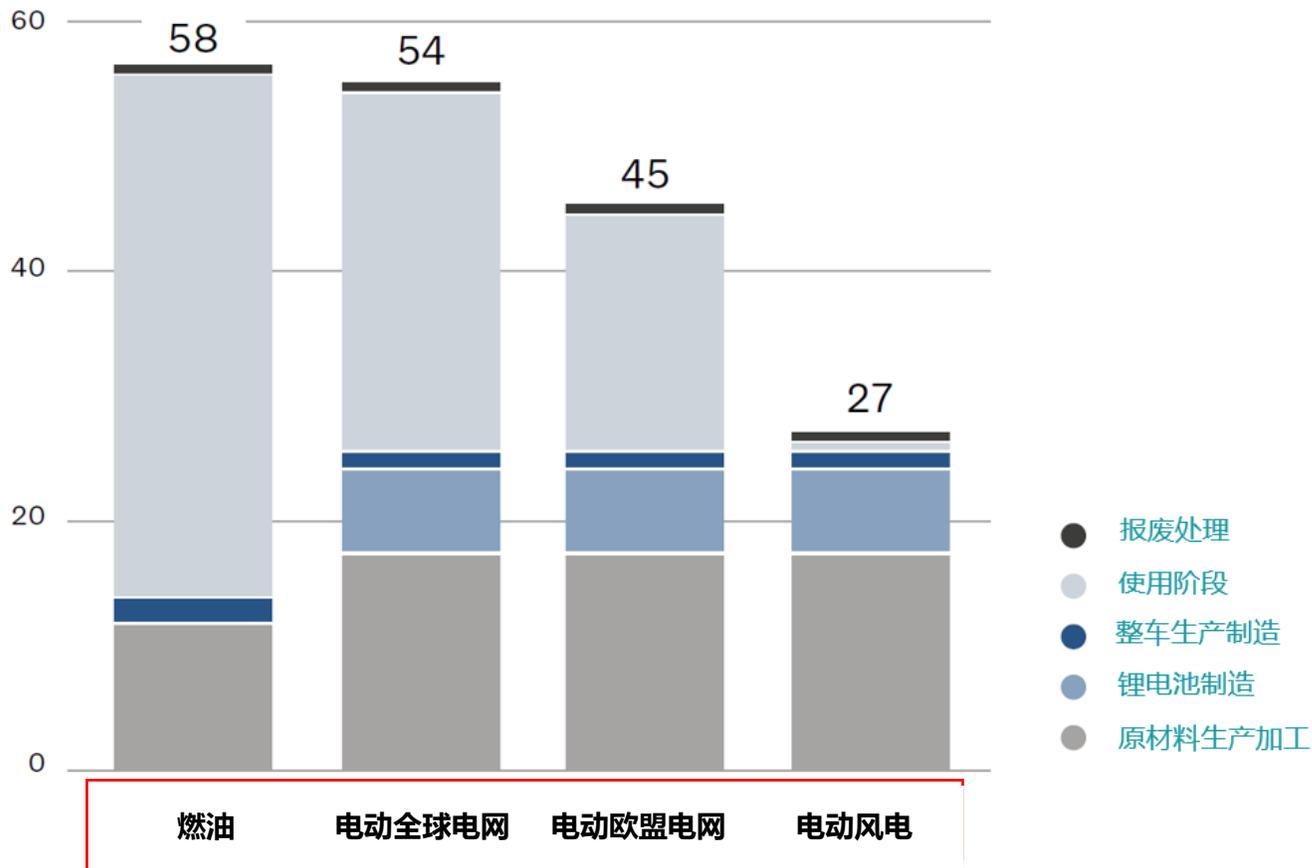
53g CO2eq/use (18g)

391g CO2eq/use (18g)



电动汽车的碳足迹

全生命周期 (20万公里) 碳排放 (吨 CO₂-eq)



Region	2019 produced vehicles	Share
Europe	484236	69 %
Asia	185640	26 %
Americas	35160	5 %
Total	705036	100 %

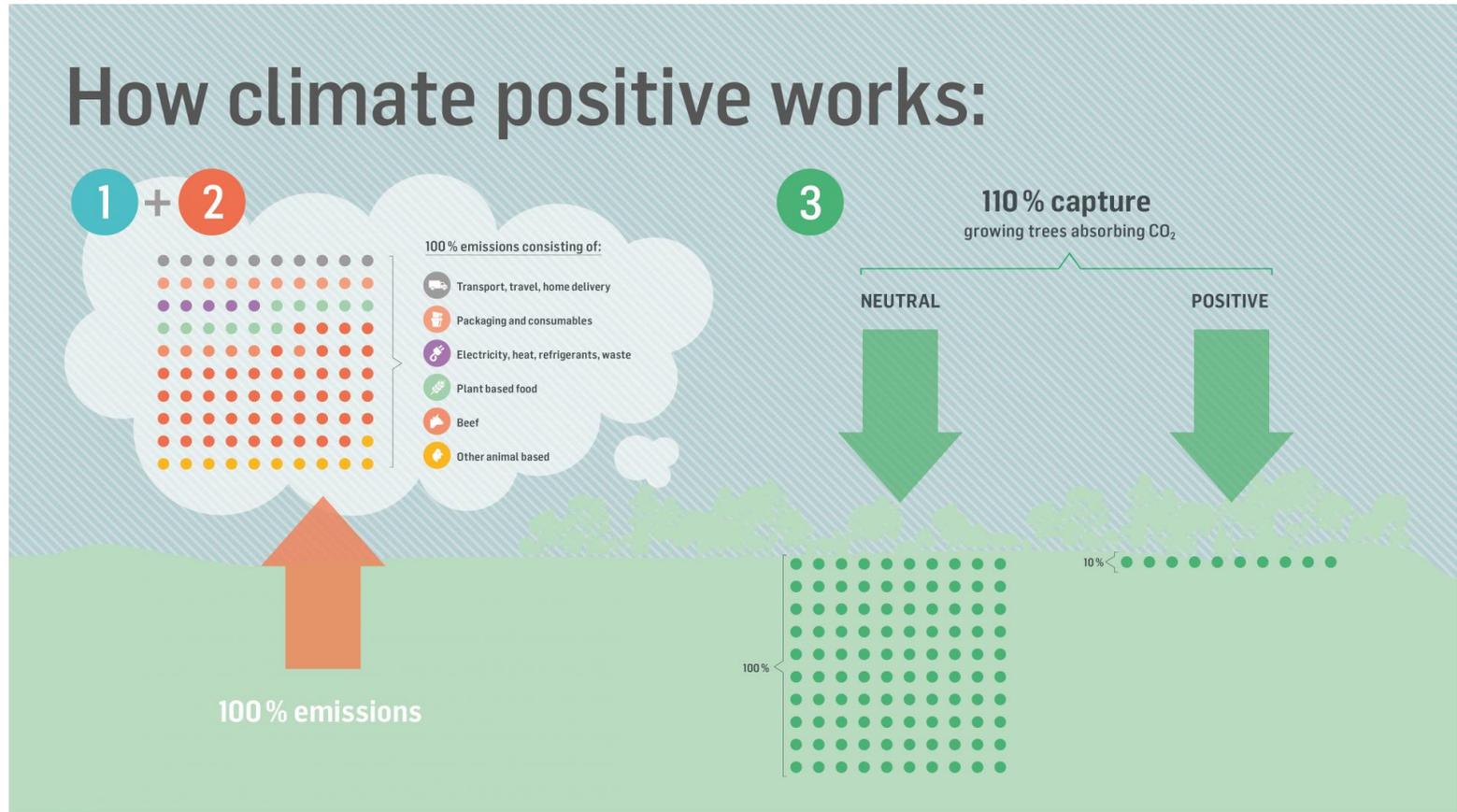
	Break-even (km)
Global Electricity Mix/XC40 ICE	146 000
EU28 Electricity Mix/XC40 ICE	84 000
Wind Electricity/XC40 ICE	47 000

绿色制造，制造绿色，使用绿色

碳中和产品—“气候正效益”汉堡



113g牛肉汉堡 = 1.2kg CO₂



- 2018年6月，某连锁餐饮品牌宣布推出世界上第一个“碳中和”，“气候正效益”汉堡，具体抵消方式包括在非洲乌干达种树、增加更多植物性食物等。该品牌的汉堡是“110%碳中和”，因为他们考虑到了顾客来连锁店的路上会排放的二氧化碳。减排成本占该品牌每年营收的 0.25%。

“碳中和”有国际标准吗？

ISO 14068 标准目前处于工作组草案阶段，预计要到2023年才能正式发布

- 参考标准：ISO14064-1、ISO14064-2、GHG protocol
- 减排优先于抵消，可以抵消多少？
- 核算是否包括范围三？组织与产品碳中和
- 是否允许组织部分碳中和？
- “碳中和”作为一个新概念，目标还没有国际普遍认可的标准，ISO 14068标准的推出将是一个漫长的过程。



感谢聆听!

