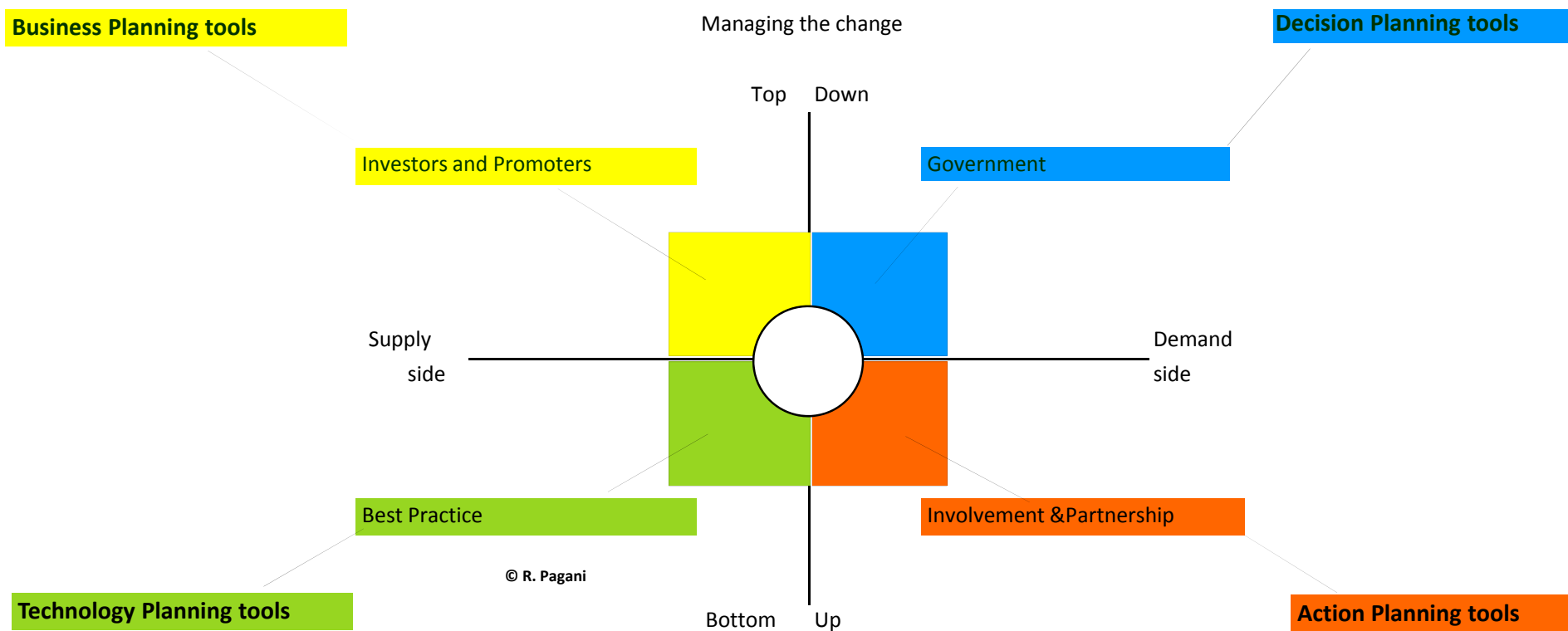


DEMO_ZONE_TOOLKIT





		Research		Demonstration				Dissemination			
		Strategy	Analysis	Project Identification	Partnership Identification	Project Formulation	Project Implement.	Monitoring Assessment	Training		Awareness
Decision Planning Tools	Stakeholder Mapping										
	Identification Session										
	Logframe Matrix										
Action Planning Tools	Sharing Event										
	Vision Workshop										
	Planning for Real										
Technology Planning Tools	Energy Action Plan										
	Low Carbon Assessment										
	Multicriteria Analysis										
Business Planning Tools	Project Finance										
	Performance Financing										
	Green P. Procurement										

计划 什么

一方面，金融部门面临流动性限制，另一方面，又有大量的项目（能源、社会和环境基础设施），项目融资正成为信贷扩展和风险管控越来越重要的结构性解决方案。

目标

降低公共风险、提高效率、以及对于项目的移交提供新的、创新性的解决方案。

项目融资将帮助：

- 通过积极的风险分散引进新型的协融资机制：政府金融机构和商业融资机构在公共基础设施的开发和旧项目的延续上成为合作伙伴。这种伙伴关系是地方经济可持续和均衡增长的整体促进因素；
- 推动和加快低碳创新和市场扩散。

项目融资的主要技术特征

- 一种普通的PPP融资—允许项目合作体由不同金融机构组成；
- 无/有限追索权性质—要求通过评估和风险分析
- 风险分散是所有参与者限制风险和允许高杠杆的关键；
- 通常和其他担保工具（如部分信用担保、承购合同）混用，以便分散风险、提高信用和降低贷款成本。

Plan_what

Faced by the liquidity constraint of the financial sector on the one hand and the large number of projects (energy, social and environmental infrastructure) on the other hand, FP is becoming an increasingly important part of *structural solutions* for credit enhancement and risk mitigation.

Objectives

Reduce public risk, improve efficiencies and create new and innovative solutions to project delivery.

Introduce new forms of co-financing through active risk-sharing: public financial institutions and commercial financing partners in public infrastructure development and renewal projects – which are integral elements of sustainable and balanced regional economic growth;

Introduce and transfer state-of-the-art technology and management know-how, scaling and speeding up low-carbon innovations and their market diffusion.

Key technical features of FP

A common form of **PPP-based financing** - allowing project consortia consisting of companies with various financial capacities;
Non/limited recourse nature – requiring thorough due diligence and risk analysis;

- **Risk allocation** is the key to limit the risk for all parties involved and allow for high leverage;
- Often combined with other **guarantee instruments** (e.g. partial credit guarantees, off-take agreement) for risk sharing and credit enhancement, and thereby to reduce loan costs.

项目融资的障碍

- 项目（如清洁技术）产生于各种技术的出现，而商业银行通常又不熟悉这些技术。这产生了一种不对称性：即对技术知识和实际技术风险判断的不同；
- 缺乏系统和特定的培训体系，因此需要有专业技术以将大量创造性思想和概念转换成银行愿意融资的项目；
- 缺乏专业知识和为可研提供的融资；
- 评估的成本非常高；
- 地方银行具有较高的流动性，但需要固定资产作为抵押品以为将来项目的现金流和债务偿付能力提供担保；
- 缺乏监管的一致性和可测性（如补贴水平）和未能解决的环境和社会问题。

定义

项目融资/（有限追索权的融资）是一个或多个项目企业的无追索权债务、股权。债务是为某一特定项目而产生的借款，债务的获得与一定时期项目能产生的收益相连续，因为这种收益是支付债务的保证。这种收益需要调整以体现项目固有的风险。

Perceived barriers to accessing FP

- Projects (e.g. clean-tech) involve a wide range of technologies with which the commercial banks are often unfamiliar. This creates a gap b/w technology knowledge and perceptions of actual technology risks;
- No systematic and specific training system exists. There is a great need to develop expertise to translate the large number of creative ideas and concepts into a "bankable project pipeline";
- Limited access to expertise and financing for pre-feasibility/feasibility study;
- Diligence costs are considered high
- The local banking sector is highly liquid, but tend to lend mainly against fixed assets collateral as opposed the prospective project cash flow and debt service capacity
- Lack of consistency and predictability of the regulatory framework (e.g. subsidy levels) and unsolved environmental and social issues.

Description

Project Finance/(Limited Recourse Finance) involves non-recourse debt and equity from one or more sponsoring firms. Debt is borrowed for a specific project and the amount of debt made available will be linked to the revenue that the project will generate over a period of time as this is the means to pay back the debt. This amount is then adjusted to reflect inherent risks involved in the project.

过程如何

项目融资是常见的长期和劳动密集型项目的融资机制，涉及大量的资本金，其结果是风险巨大，可出现在项目周期的任何阶段。

谁（参与者）

项目融资有很多参与者，参与了项目开发和运营的不同阶段

- ✓ 母公司（开发商）：基于自身或所在国政府的采购过程提出的项目。
- ✓ 特定目的机制（即项目公司）：由母公司（开发商）为项目建设的需要设立的法定实体。
- ✓ 所在国政府：委托母公司（开发商）以政府的名义建设项目。通常所在国政府作为项目担保的提供者，如以承购合同的形式。
- ✓ 地区开发银行、两边机构和商业银行：提供贷款、担保、风险保险、股权、技术和运营支持。
- ✓ 承包商和建设公司：租赁设备，并参与项目的建设。由于建设风险存在，有必要在合同中分散风险。
- ✓ 基础设施运营商：一旦项目完成，项目公司或其他公司将接管和运营这些设施。
- ✓ 客户（如承购合同购买者）：母公司（开发商）或项目公司为项目产生的产品和服务签署承购合同。一般情况下，所在国政府是承购合同的购买者。

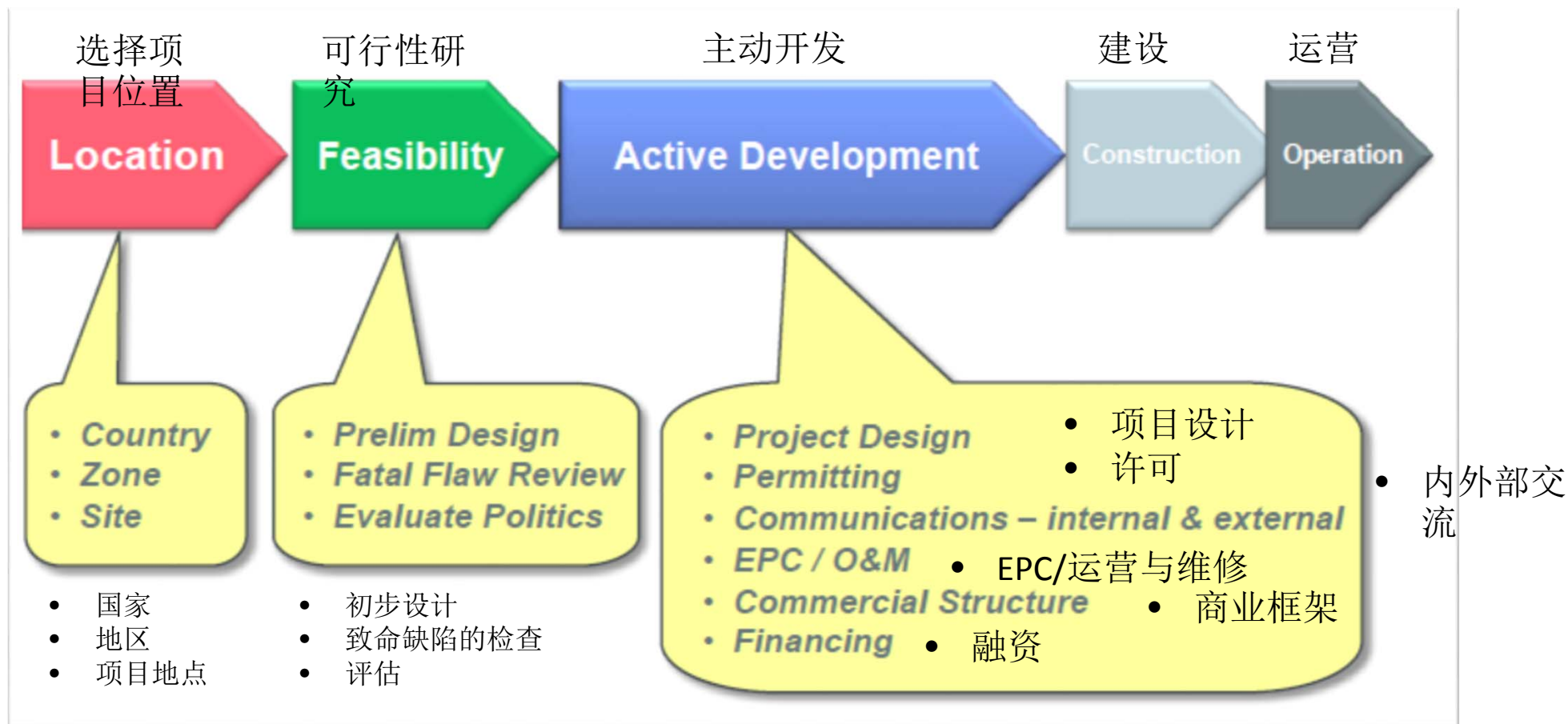
Process_how

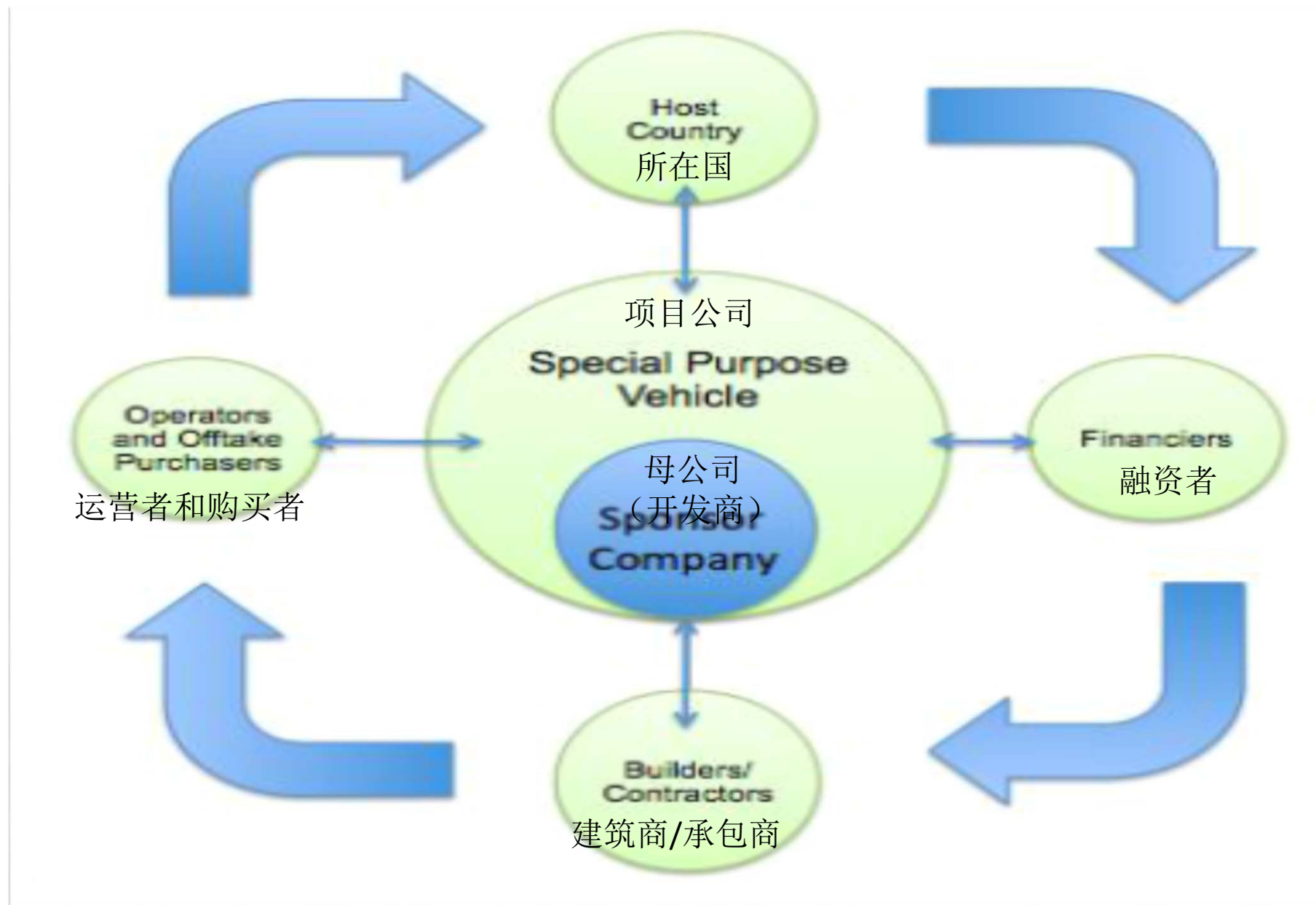
Project finance is a common financing mechanism for long-term, labour-intensive projects, involving large volumes of capital. Consequently, risks are abundant and may emerge any stage in the project cycle.

WHO

Project finance has many participants who participate at different stages of a project's development and operation:

- ✓ **Sponsor company (companies)**: initiate the project on their own, or through host government's procurement process.
- ✓ **Special Purpose Vehicle (project company)**: Created by a project sponsor as the legal entity for the purpose of constructing the project.
- ✓ **Host government**: Procure a sponsor company to build the project on behalf of the government; It is also common for the host government to be a provider of sovereign guarantees, e.g. in form of off-take agreement.
- ✓ **Financial institutions (multilateral, regional development banks, bilateral, and commercial banks)**: provide loan, guarantee, risk insurance, equity ownership, technical and operational support.
- ✓ **Contractors and builders**: Lease equipment and are involved in the construction of the project. As significant construction risks can be involved, it is essential that risks are clearly allocated in agreements.
- ✓ **Infrastructure operators**: Once the project is completed, either the SPV or other company will take over the site and operate the facility.
- ✓ **Customers (e.g. off-take purchasers)**: Sponsor or SPV seek out and sign an off-take agreement for the product or service the project will generate. Often, the host government is the off-take purchasers.





计划什么

基于业绩的融资取决于政府绿色政策和监管以创造与改善能源和环境业绩相关产品和服务（如建筑物能源节省）的需求。

定义

能源服务公司是一家新商业概念的公司，也是一个典型的基于业绩融资机制以促进最终使用者/需求方能源管理的例子。

能源服务公司致力于：

- 以能源业绩合同的形式为最终客户提供能源节省的担保；
- 通过第三方安排融资以获取业绩费和一部分能源效率提高而得到的节省。

建筑物，特别是，商业和居民建筑物的改造是非常重要的，但存在很大的结构性障碍：

- 所有者和承租人的利益冲突：所有者是那些做投资决策不支付能源消费的人；
- 短的回收期：在商业和居民建筑物的改造通常要求低于3年的回收期，这使得大的建筑物改造不具吸引力；
- 高的资本成本：非公共部门的财务不稳定，其融资通常需要大约年利率10%，而公共部门仅需要大约年利率5%；
- 比较少的政府优惠和强制要求：大多数建筑物能源改善的强制要求主要集中于公共建筑；
- 比较少的政府优惠和强制要求：与公共建筑物特别是学校和政府等建筑物比较，居民建筑物的规模比较小。

中国在十二五规划中有绿色建筑的目标：

Plan_what

Performance-based financing is heavily relying on governments' green policies and regulations to generate demand for products and services associated with improvement in energy – and environmental performance, for instance, in building energy savings. .

Description

Energy Service Company (ESCO) is a new business concept and typical example of performance-based financing vehicle for promoting end-user/demand-side energy management. The ESCO business model is to:

- Provide an energy-savings guarantee to an end-customer in form of Energy Performance Contract (EPC);
- Arrange financing through a third party in exchange for a performance fee and a share of the savings from energy efficiency.

The building sector, particularly, commercial and residential is important, but significant structural barriers exist:

- **Conflict of interest b/w owner vs. tenants**: Owners are the ones to make investment decision but they do not pay for energy consumption;
- **Short-term payback period**: Commercial and residential sectors often request less than three-year payback period, which makes large improvements unattractive;
- **High cost of capital**: Financial instability in the nonpublic sector causes approx. 10% APR financing, whereas public jobs get approx. 5% APR;
- **Less government incentives and mandates**: Most of the building-energy-efficiency improvement mandates are focused on public buildings;
- **Less government incentives and mandates**: Small-scale buildings compared with public buildings, especially for schools and government buildings.

China has green building targets in the 12th FYP

Source: *ESCOs in the US and China*, McKinsey & Company, 2011

Performance-Based Financing 基于业绩的融资

- 新建筑物：与上世纪八十年代的建筑物比较，新建筑物有65%的能源消费节省；
- 改造：对于大的城市公共建筑物进行能源评估。

过程如何

能源服务公司是一家从事能源节省解决方案业务的公司，从咨询到系统设计，再到项目执行和运营等

谁（参与者）

- ✓ 能源服务公司，涉及到整个项目周期和服务链
- ✓ 能源提供者
- ✓ 最终客户：企业/公共、商业和居民建筑物的所有者/或租户
- ✓ 金融机构
- ✓ 政府：提供资金和监管

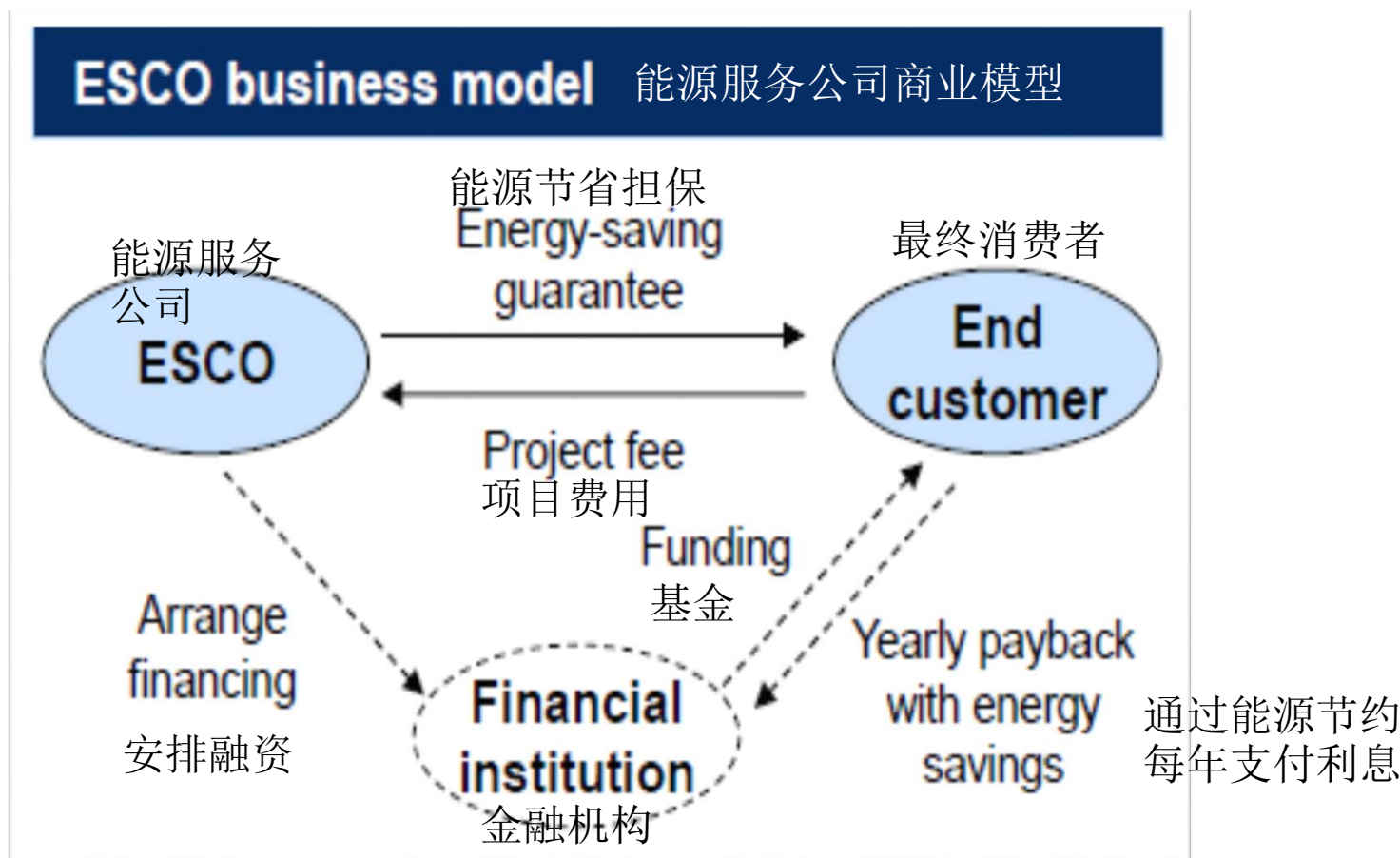
- **New buildings:** 65% energy consumption reduction compared to 1980 building block;
- **Retrofit:** Energy audits for large urban public building .

Process_how

ESCO is an energy-saving solution business, broadly ranging from consulting to system design, implementation and operation...

WHO谁

- ✓ ESCOs along the project cycle and service chain
- ✓ Energy suppliers
- ✓ End-customer: industries/ (public, commercial , residential building owners and/or occupiers
- ✓ Financial institutions 金融机构
- ✓ Government: funding and regulation



能源服务公司的
解决方案

能源咨询

系统设计

项目执行

运营

ESCO solution domain

Activities

Energy
consulting

- Energy-efficiency audit
- Financing

System
design

- Supporting energy infrastructure design
- Equipment type and brand selection

Imple-
mentation

- Project management
- Solution integration
- Site construction and equipment installation

Operation

- Energy consumption monitoring
- Maintenance
- Rate analysis and risk management
- Billing administration

业务

- 能源效率的评估
- 融资

- 支持能源基础设施的设计
- 设备类型和品牌选择

- 项目管理
- 整体解决方案
- 工地建设和设备安装

- 能源消费监控
- 维护
- 评级分析和风险管理
- 收费管理

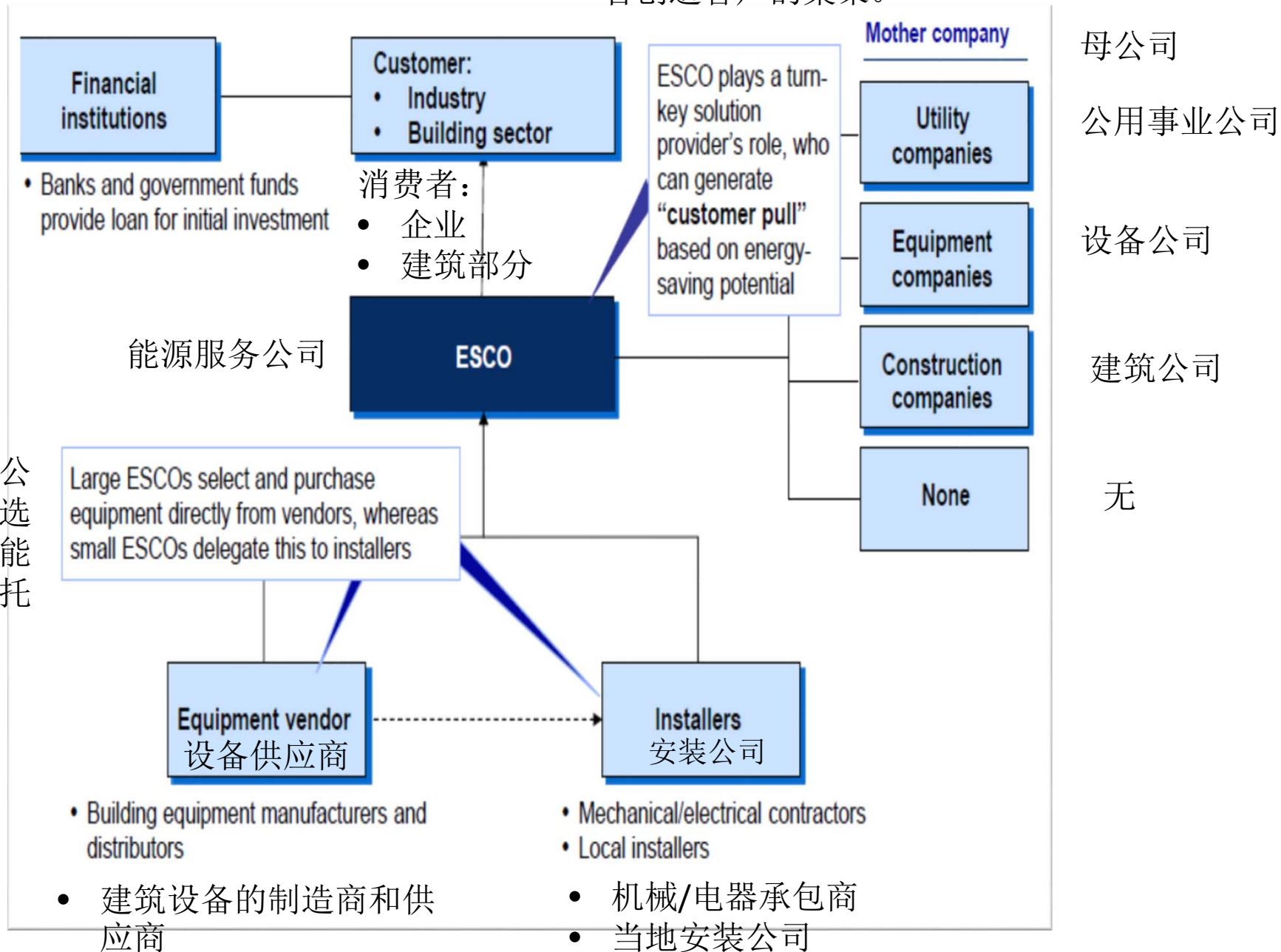
基于业绩的融资 Performance-Based Financing

能源服务公司提供完整解决方案。它可以根据潜在的能源节省创造客户的集聚。

金融机构

- 银行和政府基金为初始的投资提供贷款

大型的能源服务公司直接从供应商选购设备，而小的能源服务公司会委托给安装公司



计划什么

绿色政府采购是指在政府采购过程中的环境标准，而使得采购过程可以成为创造市场的工具以刺激环境友好和提高资源效率的产品和服务的采用。

目标

政府是欧洲的主要消费者，他们每年支付了大概2万亿欧元，相当于欧盟GDP的17%，绿色政府采购将帮助：

- 实现明显的直接环境效益
- 促进绿色产品和服务的市场化
- 为公司和私人消费者树立榜样

绿色政府采购的主要原则

- 最物有所值—不是最低价格
- 公平和公开竞争
- 透明和可测性
- 根据成本 and 环境影响评估支持其生命周期

从中小企业的角度

- 这些标准是否适合于中小企业？
- 中小企业通常担心生态和社会采购被滥用以保护既得利益者和大的竞争者。

欧盟有关绿色政府采购的特别法规

- 能源之星条例（2008年）：有义务购买能够提高能源效率的办公设备；
- 清洁车辆条例（2009年）：有义务购买环境友好的车辆；
- 建筑物的能源业绩条例（2010年）：到2018年底政府拥有和租赁的新建筑必须接近零能源（消耗）；
- 能源效率条例：购买具有高能源效率建筑物和高能源等级设备的软义务。

Plan_what

GPP involves environmental standards in the public procurement process, so the procurement process can be a powerful “market-creation” tool to stimulate uses of environment-friendly and resource-efficient products and services.

Objectives

Public authorities are major consumers in Europe: they spend approximately 2 trillion euros annually, equivalent to some 17% of the EU's gross domestic product. GPP will help to:

- Achieve significant direct environmental benefits
- Drive the market for greener products and services
- Set an example for corporate and private consumers

Key principles of GPP

- Best value for money – against lowest price
- Fair and open competition
- Transparency and predictability
- Support for life cycle based cost and environmental impact assessments

A SME perspective

Are criteria objective and accessible for SMEs ?

- SMEs are often concerned that eco- and social procurement is misused to protect incumbents and large competitors.

EU's sector specific mandatory GPP rules

- Energy Star Regulation (2008): Obligation to buy energy efficient office equipment;
- Clean Vehicles Directive (2009): Obligation to buy environmental friendly vehicles
- Energy Performance of Buildings Directive (2010): Obligation for new buildings owned and occupied by public authorities to be “nearly zero-energy” by the end of 2018;
- Energy Efficiency Directive : “Soft” obligation to purchase energy efficient buildings and equipment of the highest energy labeling class.

在欧盟成员国和OECD国家绿色政府采购的障碍

- 担心可能高价格
- 缺乏监控和评估机制
- 没有/很少采用绿色标准的动力
- 对于质量的担心
- 缺乏足够的供给
- 缺乏应用环境标准的指导和法律专业知识
- 有限的（已有）产品/服务环境标准
- 缺乏实用工具、信息和培训
- 缺乏相关政府部门之间的协调
- 在国内、国际水平上的法律不确定性

定义

绿色政府采购是一个过程，即政府购买与同类相比整个生命周期都低环境影响的商品和服务（源自：为更好环境的政府采购，2008年）

Perceived barriers for green public procurements in EU MS and OECD countries

- Concern over possible higher price
- Lack of monitoring and evaluation mechanism
- No/little incentive to take green criteria into account
- Concern regarding quality
- Lack of sufficient offers
- Lack of guidance and legal expertise in applying environmental criteria
- Limited established environmental criteria for products/services
- Lack of practical tools, information and training
- Lack of co-operation between authorities
- Legal uncertainty at the national and the international supranational level

Description

GPP is a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured. ((2008) 400 Public procurement for a better environment)

过程如何

治理和技术基础

国家绿色政府采购的行动计划 (NAPs)

- ✓ 参与者：包括采购者、政府代表、供应商和贸易协会
- ✓ 产品类的辨别和重点确认
- ✓ 为促进和执行绿色政府购买而确定目标和特别措施
- ✓ 制定培训、交流和监控的支持措施

根据详细技术报告提出每一种产品欧盟通用的绿色政府采购标准，具体概述如下：

- ✓ 范围
- ✓ 技术特点
- ✓ 生产过程、使用阶段和产品生命周期末端的主要环境影响
- ✓ 现有技术
- ✓ 相关法规
- ✓ 市场可获得性
- ✓ 成本考虑

已经有**19种产品/劳务**的绿色政府采购标准已经公布，遵循的采购过程包括：

- ✓ 内容的定义
 - ✓ 最低技术和功能描述
 - ✓ 与投标者执行合同能力相关的选择标准
 - ✓ 授予合同的标准以比较各种出价和合同业绩条款
- 谁（参与者）

政治家和管理者—决策的制定者

- ✓ 具有数量环境目标的绿色采购政策
- ✓ 有效率的采购组织以协调和利用特殊的技能
- ✓ 热衷于环保和支持环保的管理者

Process_how

Governance and technical basis

National GPP Action Plans (NAPs):

- ✓ Engaging stakeholders: including procurers, government representatives, suppliers and trade associations
- ✓ Identification and prioritisation of product groups
- ✓ Setting targets and specific measures to promote and implement GPP
- ✓ Creating supporting measures of training, communication and monitoring

Common EU GPP criteria is developed for each product/service group based on detailed technical reports, outlining:

- ✓ Scope
- ✓ Technical characteristics
- ✓ Key environmental impacts during production, use phase and end of life of products;
- ✓ Existing technologies
- ✓ Related legislation
- ✓ Market availability
- ✓ Cost considerations

GPP Criteria have been developed covering 19 product/service groups and follow the procurement process, including:

- ✓ Definition of the subject matter
- ✓ Minimum technical or functional specifications
- ✓ Selection criteria related to the capacity of bidders to perform the contract
- ✓ Award criteria for the comparison of offers and contract performance clauses.

WHO

Politicians and managers – involving decision makers

A green procurement policy with quantifiable environmental targets

- ✓ An efficient procurement organisation co-ordinating and making use of specialised skills
- ✓ Committed and supportive management

购买者—有效率和简单的工具加上购买者的技能

- ✓注重最为重要的产品和环境问题
- ✓选择环境效益和财务效益可以测量的目标
- ✓意识到市场可以提供的东西
- ✓整个过程与供应商进行公开和透明的谈判
- ✓最终使用者参与整个采购过程
- ✓基于整个生命周期的评估和在评估过程中强调环境标准
- ✓环境标准需与法律法规一致

最终使用者—继续跟进

- ✓最终使用者经验的评估
- ✓通过发放问卷、随机检查和访谈供货商进行环境标准的更新，市场需要这种回馈
- ✓在单位内交流环境效益和其他有益的结果

Purchasers – efficient and simple tools + purchasers' skill

Prioritising the most important products and environmental issues

- ✓Measurable targets for environmental benefits and financial savings
- ✓Being aware of what the market has to offer
- ✓Open and transparent dialogue with suppliers throughout the process
- ✓Involving users in the procurement process
- ✓Life - cycle based product assessment and prioritising environmental criteria in the evaluation
- ✓Environmental criteria comply with legislation

Users – Continuous follow-ups

- ✓Evaluation of the experiences of end-users
- ✓Follow- up of environmental criteria by issuing questionnaires, making random checks and visits to suppliers – the market wants this feedback!
- ✓Communicating environmental benefits and other positive results within the organisation