

RISK

CONSTRUCTION

Key risks impacting the construction phase include:

TECHNICAL RISKS: ambiguity in technical methods, conflicting norms and standards, incomplete design, changes to and lack of experience with technology.

ORGANIZATIONAL AND PROJECT MANAGEMENT RISKS: conflicting stakeholder priorities, contract problems, lack of managerial skills, productivity issues, shortage of skilled labor, delays in deliveries, subcontractor defaults, human error.

ENVIRONMENTAL RISKS: site conditions, climate change, natural disasters.

FINANCIAL AND ECONOMIC RISKS: resource price fluctuation, fluctuation in currency exchange rates, changes in tax structure.

SOCIOPOLITICAL AND LEGAL RISKS: adverse public attitude, corruption and bribery, requirements for new permits and licenses, changes in law, regulation, and the general political landscape.

OPERATIONAL

PERFORMANCE RISK: With projects typically spanning long time frames, capital costs are reimbursed over a long period of time at contractually-agreed-upon prices. Yet these time frames create significant potential for operating circumstances to change. Some may attempt to extricate themselves from existing contracts as a result.

COST RISK: Relates to changes in the real price of different components integral to the project.

SUPPLY RISK: Relates to whether key components (or inputs) for the project are available in the requisite quantity and quality.

MACROECONOMIC RISK: Pertains to significant adverse impacts stemming from the wider economy, such as a fluctuation of exchange rates or rising inflation.

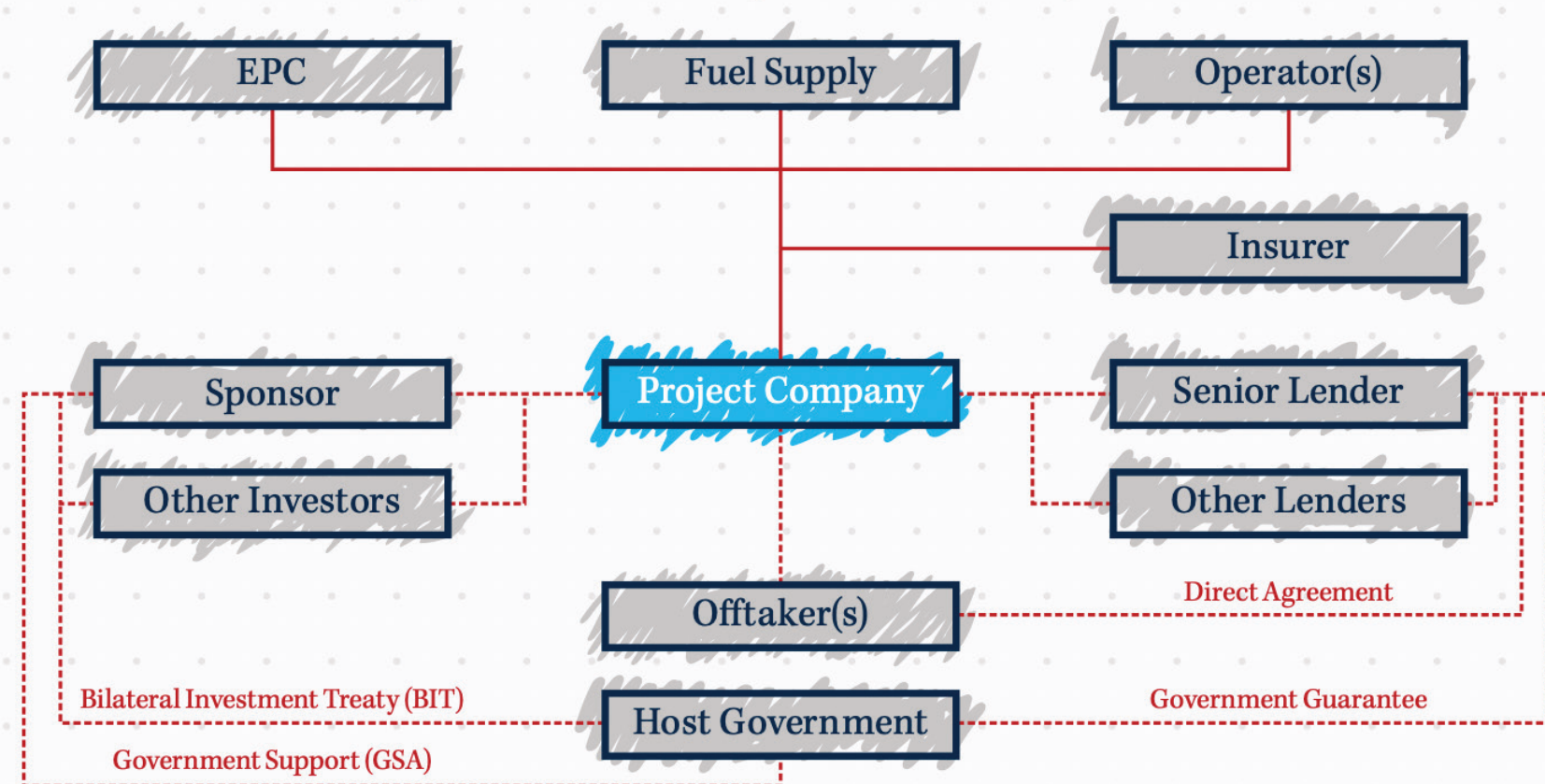
COUNTERPARTY RISK: Infrastructure projects that rely on a single offtaker will incur a higher level of operational risk.

REGULATORY AND POLITICAL RISKS: These risks are wide ranging and relate to changes in regulations, political support and risk of expropriation, as well as risks related to wars and sanctions.

RISK ALLOCATION

In the charts and tables below, we provide an illustrative example of how project agreements could be structured in a power infrastructure project, as well as how risks are allocated:

Infrastructure Project Structuring – Power Project



Risk Allocation: Construction Phase

Risk	EPC Contractor	SPV	Offtaker	Host Government
Construction cost overrun	✓			
Construction delay	✓			
Cost overrun due to government permits				✓
Cost overrun due to change in law			✓	
Selected environmental risks	Shared		Shared	Shared

Risk Allocation: Operations Phase

Risk	O&M Contractor	SPV	Offtaker	Host Government
O&M cost overrun		✓		
O&M performance risk	Shared	Shared		
Technology risk (e.g. degradation)		✓		
Cost overrun due to government permits				✓
Cost overrun due to change in law			✓	
Demand risk			✓	

BY THE NUMBERS*

42%

the increase in value of construction disputes in North America from 2021-2022

SOURCES:

Understanding Infrastructure Risks: Construction Risks [November 2022].
 Understanding Infrastructure Risks: Operational Risks [December 2022].
 Understanding Infrastructure Disputes: Financing and Allocation of Risks [October 2022].
<https://media.thinkbrg.com/wp-content/uploads/2022/10/25121719/Understanding-Infrastructure-Disputes-Financing-Risks.pdf>

*SOURCES (By the Numbers):

Arcadis, 13th Annual Construction Disputes Report North America | 2023: Embracing change moving forward, Arcadis North America Contract Solutions team [2023].