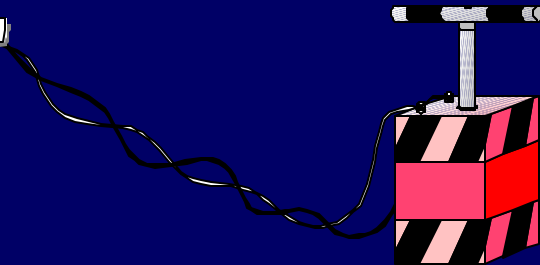


PERFORMANCE CONTRACTING MODELS



and

RISK MANAGEMENT



PERFORMANCE CONTRACTING MODELS

Range of Options



Business Solutions

Chauffage

Integrated solutions

Supply efficiencies

Comprehensive demand efficiencies

Single measure

More complex
More risk



PERFORMANCE CONTRACTING MODELS

Value Creation

Business Solutions

Chauffage

Integrated solutions

Supply efficiencies

Comprehensive demand efficiencies

Single measure

The Vale logo, consisting of the word "Vale" in a stylized, italicized font, is positioned vertically on a blue arrow that points upwards. The arrow is part of a larger graphic of a tree-like structure made of blue arrows pointing upwards, set against a background of blue squares of varying shades.

PERFORMANCE CONTRACTING MODELS

Two dominant world models:

French model

North American model

Neither one is apt to be a perfect fit in Brazil

PERFORMANCE CONTRACTING MODELS

GUARANTEED SAVINGS

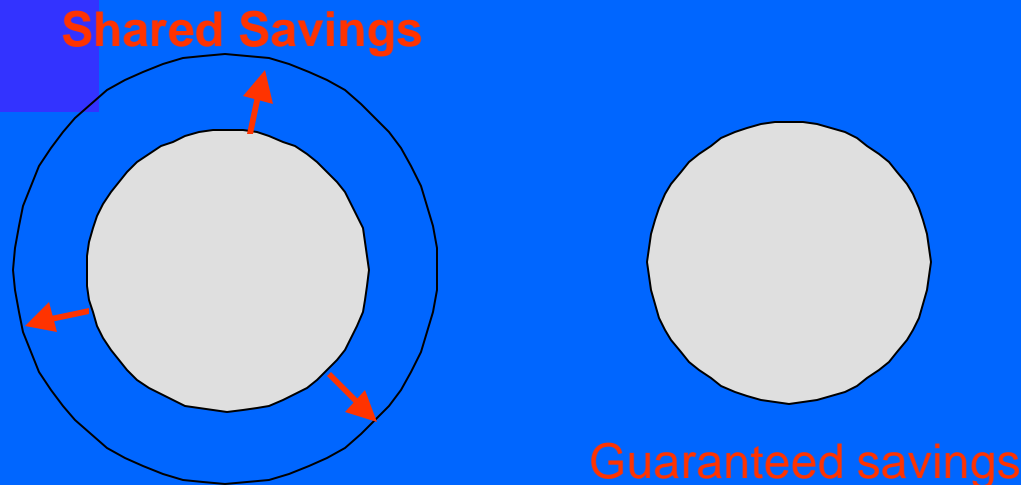
- Level of ENERGY saved is guaranteed
- Value of energy saved is guaranteed to meet debt service obligation down to a floor price
- Owner carries credit risk

SHARED SAVINGS

- Shares % of energy COST savings
- Usually off balance sheet
- Equipment may be leased
- ESCO typically carries financing; so ESCO has credit *and* performance risk
- Customer may have more payment exposure

PERFORMANCE CONTRACTING MODELS

CUSTOMER ISSUES IN SHARED SAVINGS



What happens when the “pie” gets bigger?

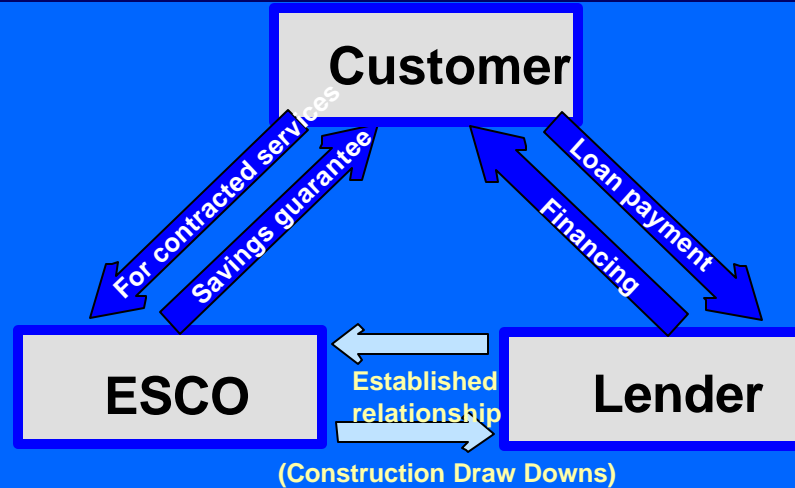
Payment structure can work against ESCO as a partner.

Betting on price of energy can be risky.

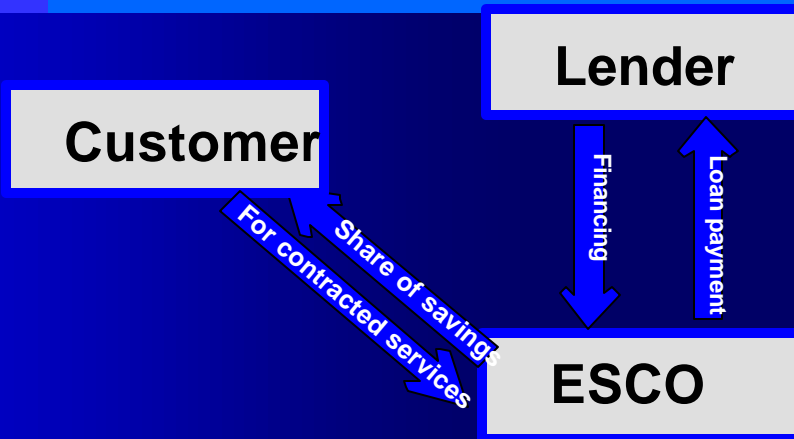
PERFORMANCE CONTRACTING MODELS

CASH FLOW COMPARISON

GUARANTEED SAVINGS



SHARED SAVINGS



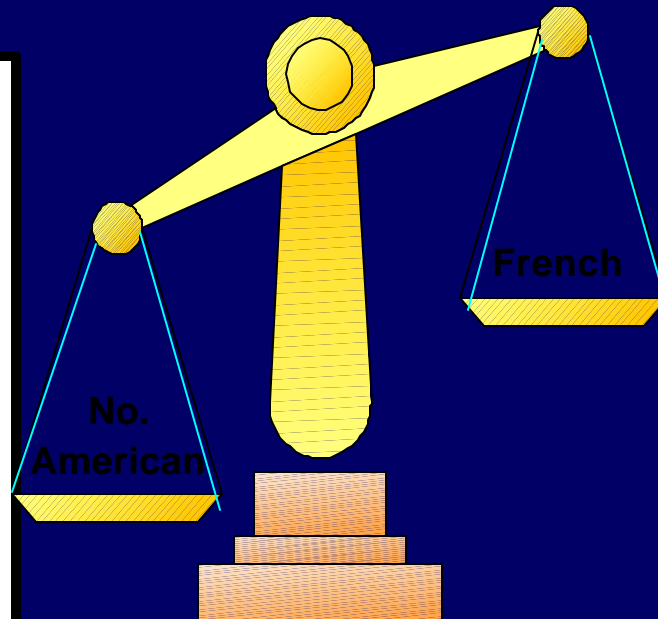
PERFORMANCE CONTRACTING MODELS

Guaranteed Savings

TPF

ESCO carries only performance risk

Quicker savings for owner/ESCO



Shared Savings

ESCO carries credit & performance risks [leveraging problem]

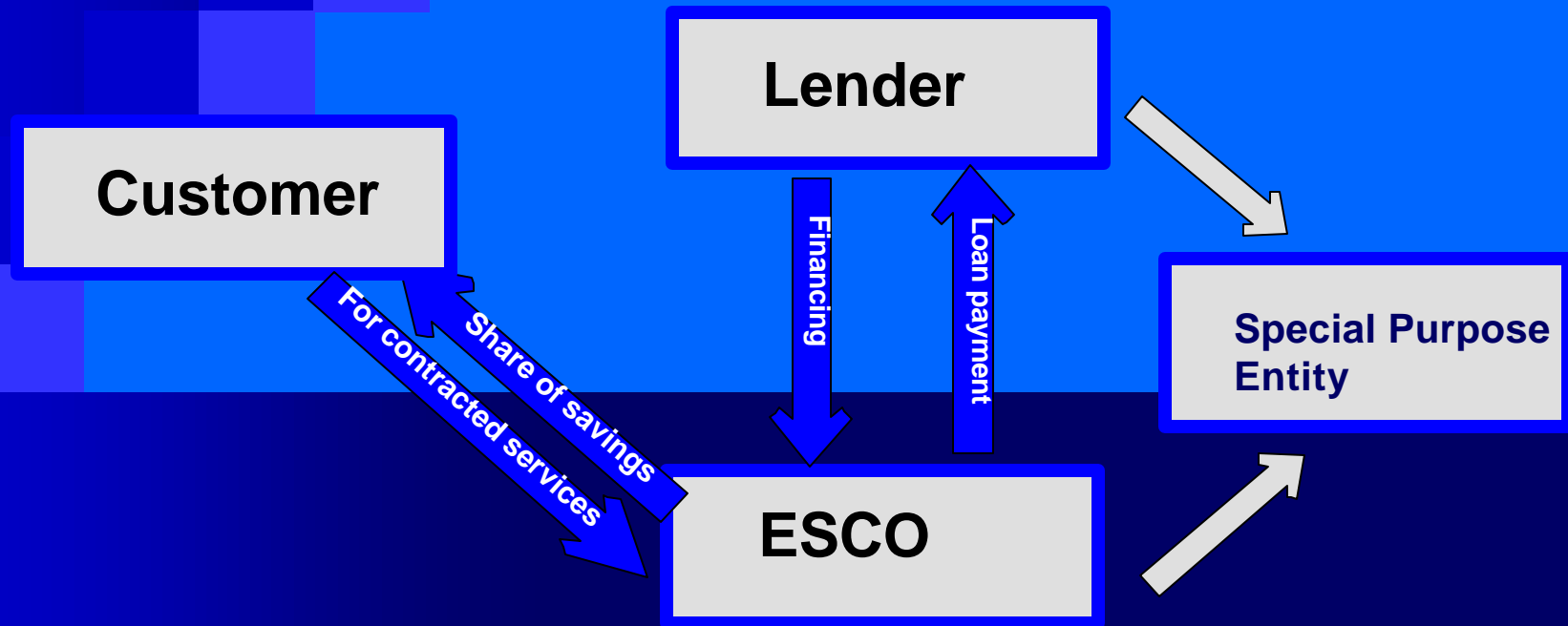
More investment goes to financing

4 Step process

Big ticket items delayed

PERFORMANCE CONTRACTING MODELS

CASH FLOW: TYPICAL SHARED SAVINGS



PERFORMANCE CONTRACTING MODELS

ESCO Issues in Shared Savings

- ★ Betting on the future price of energy.
- ★ Confrontation; adversarial relationship
- ★ Customer “non-involvement” in debt

Note: Customers and ESCOs share common concerns regarding shared savings.

PERFORMANCE CONTRACTING MODELS

How can the two dominant world models be modified or adapted to meet Brazil's unique needs?

Consider models on a continuum:

Shared
Savings

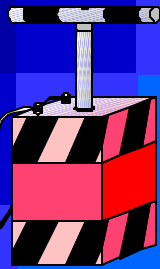
Guaranteed
Savings



KIONA INTERNATIONAL

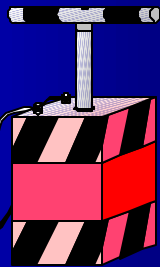
RISK MANAGEMENT

From 25 years and 31 countries, we have learned ...



Threats to savings

Risks — managing them



Threats to profits

RISK MANAGEMENT

From 25 years and 31 countries, we have learned ...



Success belongs to the ESCO that can most effectively:

- **identify the risks**
- **evaluate them accurately**
- **develop effective mitigating strategies**
- **put the right price tag on the risks they accept**

RISK MANAGEMENT

Primary rule:

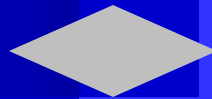


If you assign risk, expect to pay for it.

If you accept risk, expect to be paid for it.

RISK MANAGEMENT

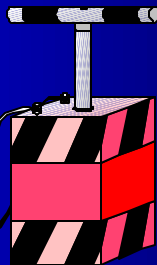
From 25 years and 31 countries, we have learned ...



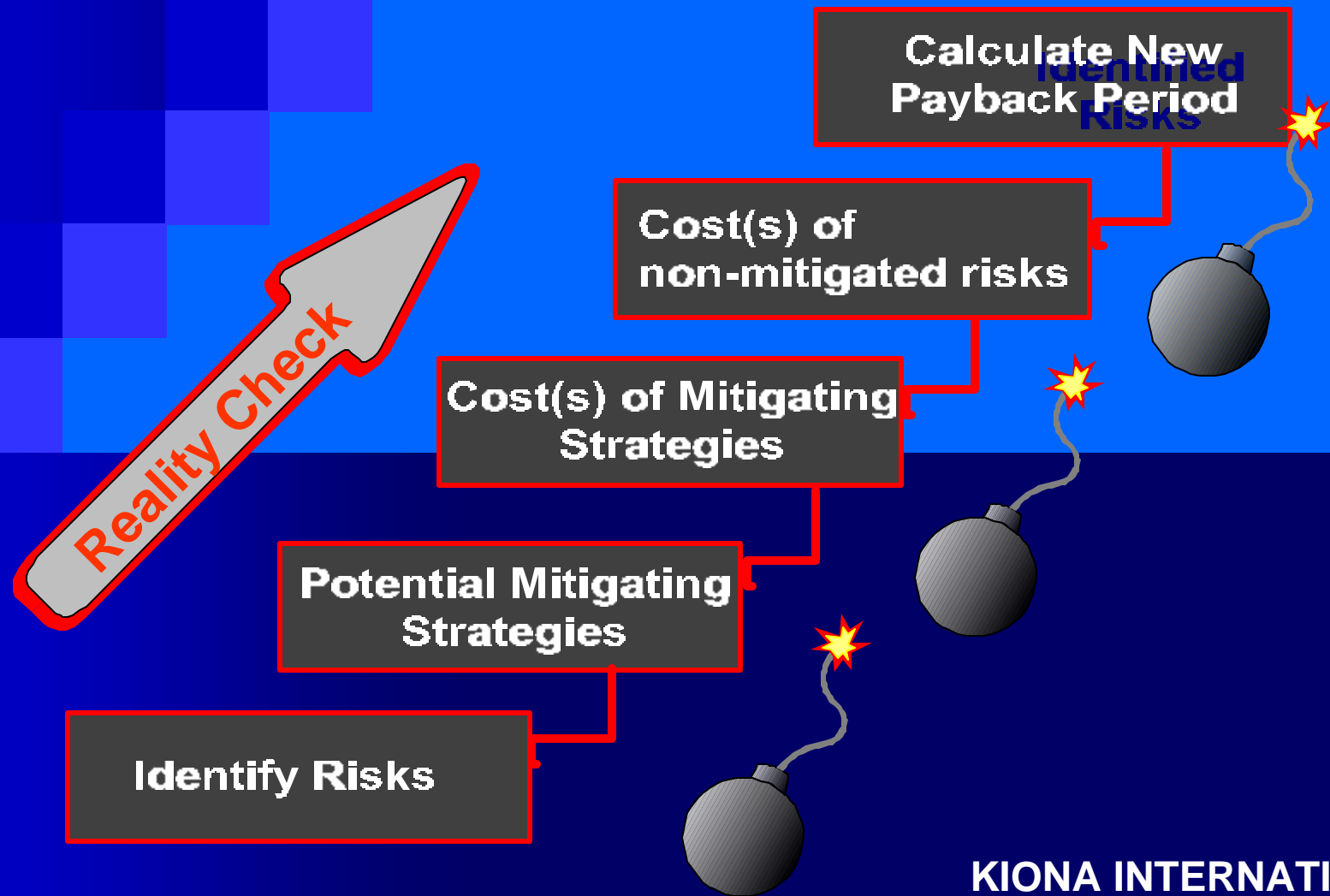
Key ESCO Risks

Identification, Management & Mitigation

- > Customer pre-qualification
- > Project Development --
Elapsed time
- > Technical --
M&V; baseyear/baseline
Quality of audits
- > Project Management



RISK MANAGEMENT



RISK MANAGEMENT

Most crucial thought of the day:

Performance contracting is risk management

RISK MANAGEMENT

Managing Risks Through Financial Structure

"Reasonable"
savings

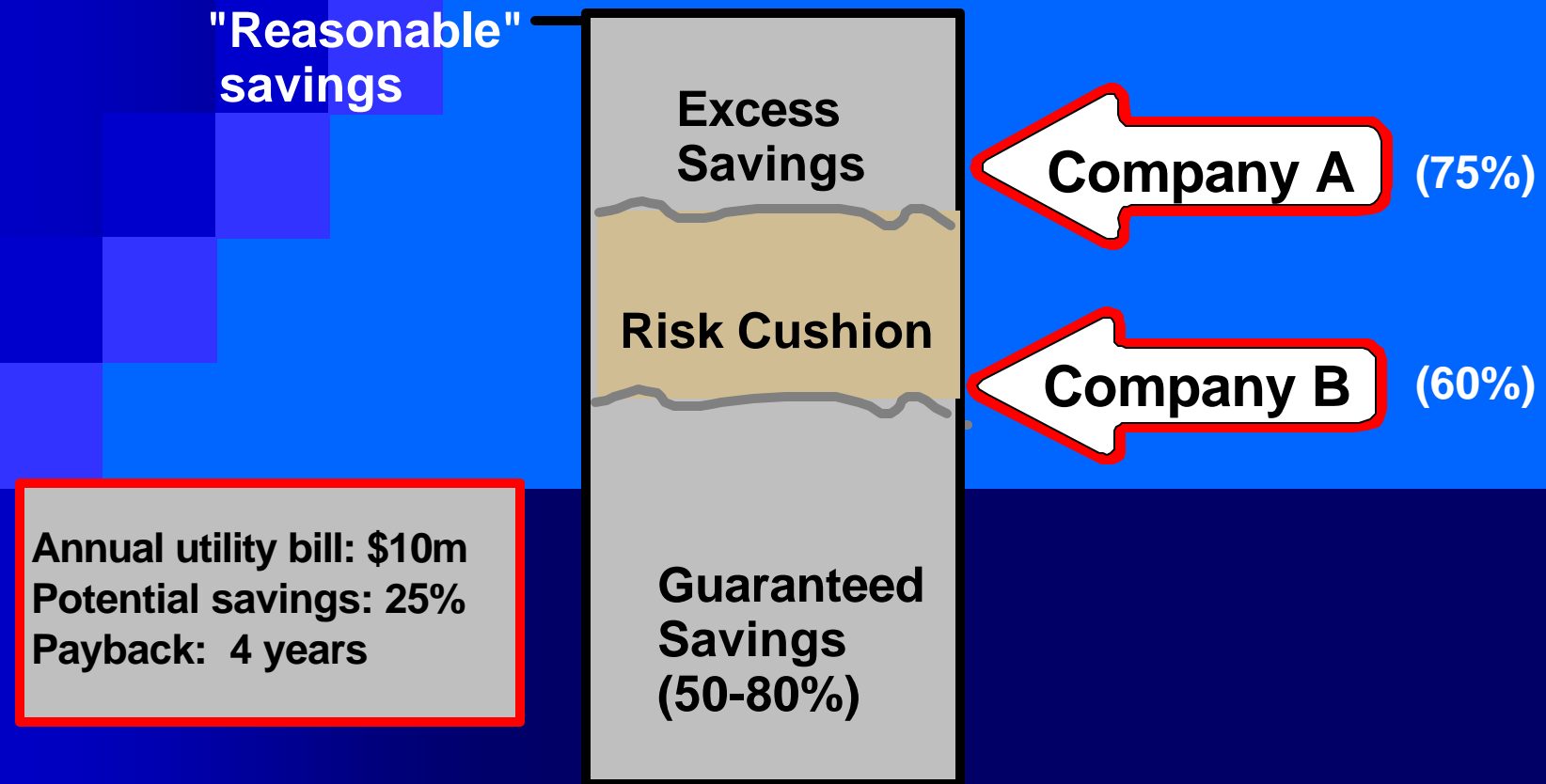


100% of Expected Savings

Design
Purchase
Installation
Cost of money

RISK MANAGEMENT

The High Price of Caution



RISK MANAGEMENT

ESCO Fee Placement

"Reasonable" savings

ESCO
Fee

3

2

1

Excess Savings

Risk Cushion

Guaranteed Savings
(50-80%)

100% of Expected Savings

Consider:

Risk implications and potential for maximum project success.

RISK MANAGEMENT

To create a “bankable” project ...

And get the most favorable terms

A proposal must show that you have:

- ★ **identified the key risks to achieving predicted savings**
- ★ **have developed ways to manage/mitigate those risks**
- ★ **and have included the associated costs of doing so.**

THE CHALLENGE TO OUR PANEL AND TO YOU

How do we take lessons learned around the world and turn them to our benefit?

What are issues and experiences we need to consider in adapting performance contracting most effectively to Brazil?

