

行政院公共工程委員會 函

地址：11010 台北市松仁路3號9樓
聯絡人：陳巧靜
聯絡電話：(02)87897612
傳真：(02)87897584

110
臺北市基隆路2段51號13樓之3
受文者：中華民國全國建築師公會

發文日期：中華民國104年11月2日
發文字號：工程技字第10400340110號
速別：普通件
密等及解密條件或保密期限：
附件：如主旨

主旨：檢送本會委託工程產業全球化專案辦公室撰擬之「9月份工程商情資訊及加值資訊」報告乙份，請轉知所屬會員參考，請查照。

說明：工程產業全球化專案辦公室業針對駐外單位蒐集之「中長期建設計畫」商情資訊，以及亞銀或歐銀貸款案件，分別提出我工程產業可參與之工程標的各3則並檢附相關研析意見，請貴會轉知所屬會員參考。

正本：中華民國工程技術顧問商業同業公會、中華民國營造工程工業同業公會全國聯合會、中華民國全國建築師公會
副本：外交部、經濟部(以上含附件)、工程產業全球化專案辦公室

主任委員 許俊逸

國外採購招標參考資訊 (發布工程商情資訊)

商情類型：目標國家計畫案

分析日期：104 年 9 月

一、商情資訊統整

截至 9 月 30 日為止，駐外單位回傳之商情資訊共有 145 件，統計如圖 1 所示，中長程計畫案數量最多共計 78 件，促參標案次之共有 39 件，最少為個別標案共計有 28 件。因中長程計畫案佔回傳資訊的多數，佔總體 53%，且工程期程較長，國內業者在取得標案資訊後有較充足的時間備標，因此後續的資訊統計及商情分析將專注在中長程計畫案。

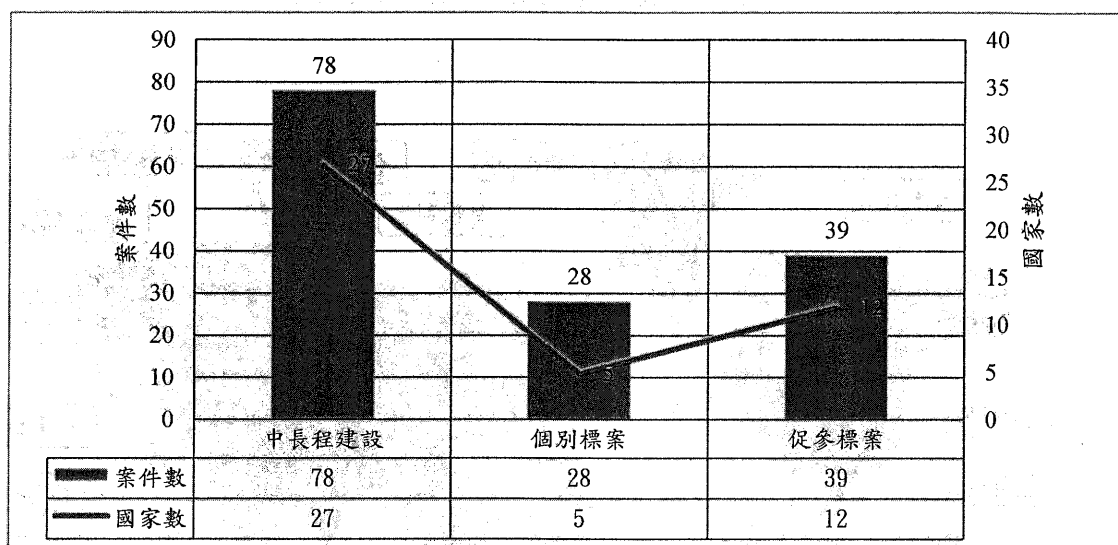


圖 1 駐外單位回傳標案統計圖

(一) 商情資訊分析(國家別)

駐外單位回傳屬中長程建設計畫共計有 78 件，依建案所在國家別分類如圖 2 所示，中國大陸件數最多共計 17 件(佔總數之 21.8%)，其次分別為英國 8 件(佔總數之 10.3%)和美國 5 件(佔總數 6.4%)。建案所在國家及其件數在全球位置標註如圖 3 所示。

將前述資料再依所在洲別分類，如表 1，亞洲件數最多共計 34 件(佔總數 43.6%)，次之為美洲 19 件(佔總數 24.4%)，之後依序為歐洲 14 件(佔總數 18%)、非洲和大洋洲皆為 5 件(佔總數 6.4%)，最少的為中東地區 1 件(佔總數 1.3%)。

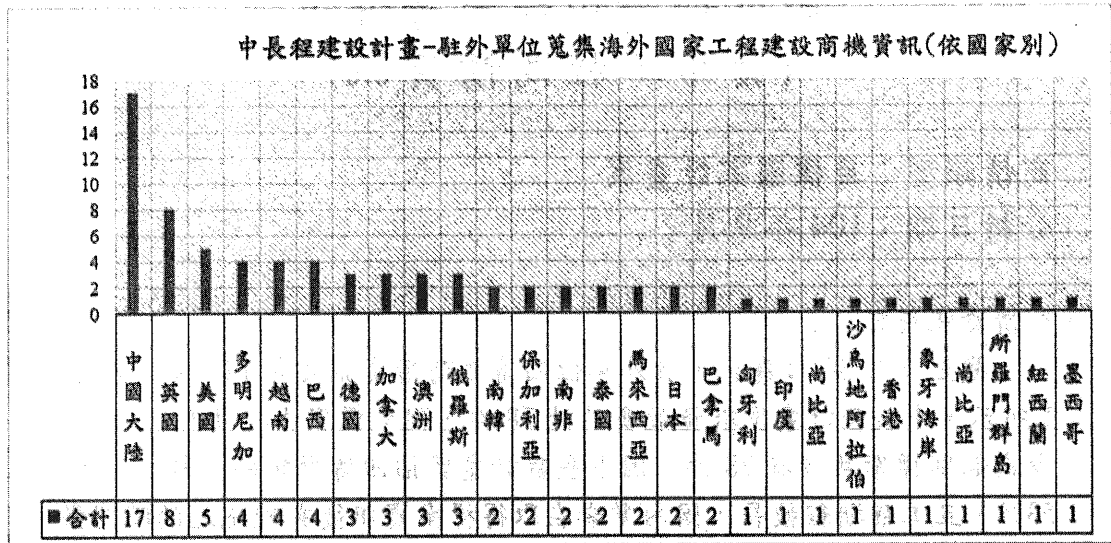


圖 2 中長程建設計畫依國家統計圖

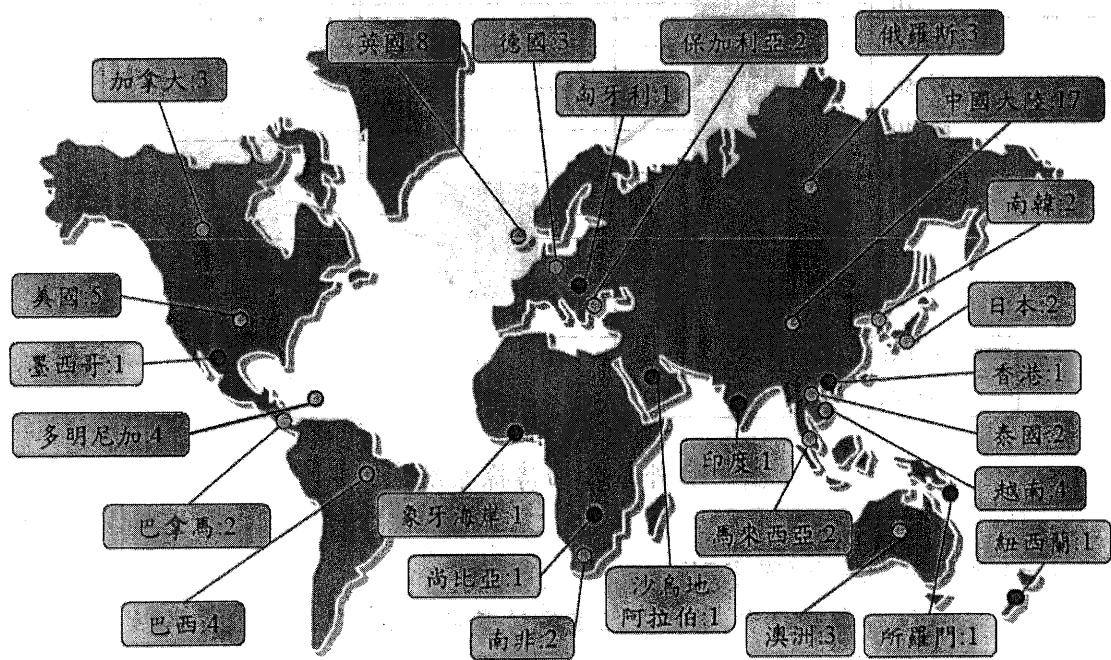


圖 3 中長程建設計畫國家/件案數全球位置圖

表 1 中長程建設計畫依洲別統計表

建案所在洲別	件數	比例
亞洲	34	43.6%
東亞	22	
東南亞	8	
南亞	1	
北亞	3	
歐洲	14	18.0%
美洲	19	24.4%
北美	9	
南美	10	
中東地區	1	1.3%
大洋洲	5	6.4%
非洲	5	6.4%

(二) 商情資訊分析(領域)

總計 78 件的中長程建設計畫依工程領域別分類如表 2 所示，大部分的建案集中在交通及基礎建設工程，共計 60 件(佔總體 77%)，其次為其他工程建案和水利與水資源皆為 6 件(佔總體 7.7%)，接著是能源工程有 3 件(佔總體 3.9%)，最後是工業工程，以及有包含多領域的建案”交通及基礎建設工程/工業工程/能源工程”和”交通及基礎建設工程/能源建設/水利與水資源”各都有一件(佔總體 1.3%)。

表 2 中長程建設計畫依工程領域分類

工程領域類別	數量	比例
交通及基礎建設工程	60	77%
其他工程建案	6	7.7%
水利與水資源	6	7.7%
能源工程	3	3.9%
工業工程	1	1.3%
交通及基礎建設工程/工業工程/能源工程	1	1.3%
交通及基礎建設工程/能源建設/水利與水資源	1	1.3%
總計	78	100%

(三) 商情資訊分析(國家與領域)

將前述資料依國家別統計其建案工程領域如下所示，

1. 中國大陸

中國大陸建案領域分類如表 3，最多的領域是交通及基礎建設工程，共計有 14 件佔了 82.4%，其中包含有山東的鐵路工

程、機場工程和道路工程及成都的鐵路工程、第二機場工程和都市規劃等建案。

表 3 中國大陸中長程建設計畫領域分類

工程領域類別	數量	比例
交通及基礎建設工程	14	82.4%
水利與水資源	3	17.6%
總計	17	100%

2. 英國

英國的 8 個案件中多為交通及基礎建設，共有 7 件佔了 87.5%，其建案包括鐵路工程、道路工程港口建設工程；其餘 1 件為水利與水資源為 Thames Tideway Tunnel 下水道工程。領域分類如表 4 所示。

表 4 英國中長程建設計畫領域分類

工程領域類別	數量	比例
交通及基礎建設工程	7	87.5%
水利與水資源	1	12.5%
總計	8	100%

3. 美國

美國之建案分類如表 5，皆為交通及基礎建設工程，包含有加州高速鐵路及矽谷捷運等工程。

表 5 美國中長程建設計畫領域分類

工程領域類別	數量	比例
交通及基礎建設工程	5	100%
總計	5	100%

4. 多明尼加

如表 6 所示，多明尼加佔比例最大的領域為其他工程建案，包含 Programa de Comunicación Social (PCS, 社會社區計畫)、Programa de Participación Comunitaria (社區參與計畫)和 Programa de Educacion Ambiental y Sanitaria(環境教育及衛生計畫)此 3 件。另有一件為東聖多明哥的下水道及排水設備建置的水利與水資源工程領域建案。

表 6 多明尼加中長程建設計畫分類

工程領域類別	數量	比例
其他工程建案	3	75%
水利與水資源	1	25%
總計	4	100%

5. 越南

越南的建案領域分類如表 7 所示，在能源工程和交通及基礎基礎建設工程領域一樣皆有 2 件，各包含寧順核一廠及核二廠的建置工程及胡志明市捷運、隆城國際機場工程。

表 7 越南中長程建設計畫分類

工程領域類別	數量	比例
能源工程	2	50%
交通及基礎建設工程	2	50%
總計	4	100%

(四) 商情資訊分析(建案規模)

中長程商情中共有 35 件建案有填寫建案規模，其規模總計有 25 兆元，依所屬洲別統計如圖 4，美洲有最高的建案規模 10.6 兆元，其次為亞洲，累計建案規模為 7.1 兆元，再次之為歐洲 3.3 兆元，後續依序為大洋洲、非洲和中東地區，建案規模分別為 2.29 兆、1.6 兆和 0.36 兆。其中規模最大之建案為巴西的物流基礎建設改善建案，預估規模有 6 兆元，規模第二為加拿大的城市智慧交通網計畫，預估規模為 3.2 兆元，第三為韓國的鐵路交通網建案，預估規模為 2.6 兆元。

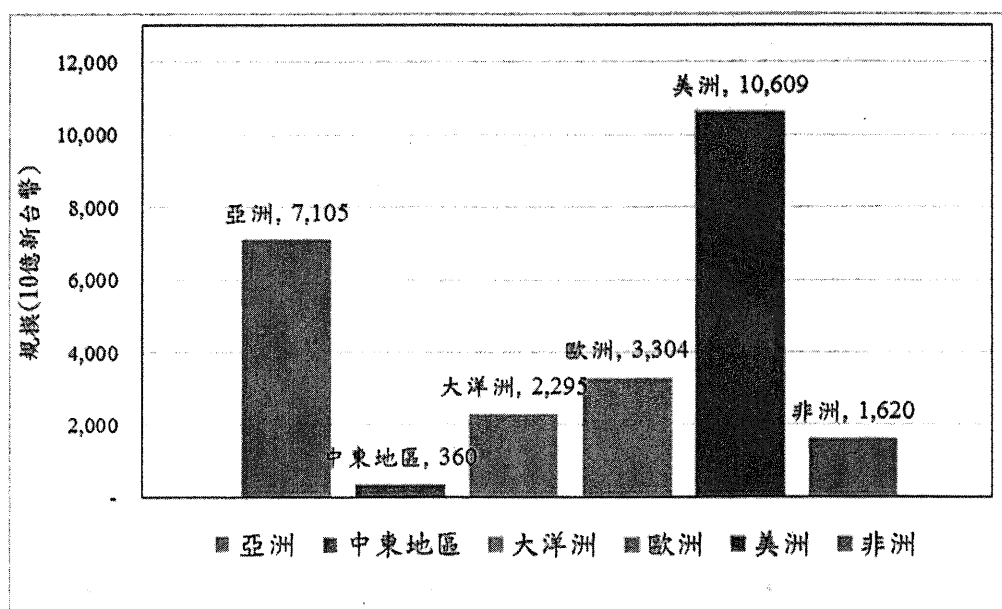


圖 4 標案規模統計

(五) 我國工程能量

1. 綜合前述商機規模統計達 25 兆，標案內容涉及，交通及基礎建設工程、水利與水資源、能源工程及工業工程領域，商機龐大。
2. 我國業者在機場工程、捷運工程、鐵路工程、道路工程、橋梁工程、水力電廠、汙水處理工程及醫院工程等均具備建置能力，可積極布局爭取標案。

二、商情資訊分析

依據前述分析，本月份列出 3 則有潛力建案，分別是機場工程領域的越南隆城國際機場建案、捷運工程領域中的越南胡志明市捷運建案及公路建設領域的巴西 2015-2018 年物流投資計畫(PIL)。

標案分析(一)：越南的隆城國際機場建案 (Long Thanh international Airport)

越南因相對穩定之政治發展、低廉的人工工資及政府單位近年來所強調的經濟發展決心，已成為國人關注的海外市場，並且國內業者在機場建案已有國內外多項實績，因此將相關建案資訊條列如下，作為後續業者備標之參考。

1. 建置預定區域：同奈省隆城縣
2. 建設期程：估計 2018 年動土~2050 年竣工並投入使用
3. 工程規模：約 160 億 3000 萬美元
4. 建案內容/項目：

根據建案規劃報告，全案總面積 5,000 公頃，預計每年將可接納乘客 1 億人次和運輸貨 500 萬噸，投資總額約 160 億 3000 萬美元，經費主要來自國家預算、政府開發援助 (ODA) 資金、PPP 模式公私合作關係融資等，工期分成 3 階段，預計 2025 年完成第一階段並開始營運。其中第一階段 (2018-2025) 施工投資額為 52 億美元，其中 26.5% 為 ODA 資金，62.4% 為 PPP，其餘為國家預算。全案於 2050 年完工後將成為全越最大的國際機場，屬 4F 級標準 (按國際民航組織 (ICAO) 標準規定)，也有望成為區域的航空國際轉運樞紐之一。

5. 我國業者國內建案經驗：
 - 林同棧工程顧問—桃園機場第一航廈、花蓮、台中水湳、金門尚義機場
 - 中華工程—桃園中正國際機場第一期工程、中正國際機場二期航廈北側停機坪工程、高雄國際機場跑道、滑行道、停機坪新建及

擴建工程

- 中興工程顧問－桃園國際機場道面整建設計案
- 榮工工程－屏東機場工程、新竹機場工程、台南機場工程
- 新亞建設－桃園機場跑道整建工程

6. 我國業者國外建案經驗：

- 亞新工程－泰國清邁國際機場及 Petchaboon, Chanthaburi, Phrae, Lumpang & Mae Hong Son 等國內機場擴建工程設計、Sihanoukville 柬埔寨國際機場擴建工程設計
- 台灣世曦－史瓦濟蘭國際機場航廈工程(史瓦濟蘭)
- 榮工工程－航站大廈工程(幾內亞比索)、伊薩空軍基地工程
- 新亞建設－沙烏地阿拉伯吉達第三跑道

7. 辦公室建議：

➤ 建案優勢：

- (1) 越南相較東南亞國家穩定政治發展穩定
- (2) 地理位置接近台灣，國內支援容易
- (3) 當地人工工資低廉
- (4) 台灣廠商已在當地深耕多年
- (5) 當前國內業者關心的重要海外市場

➤ 建案風險：

- (1) 越南政府人治色彩濃厚，佣金或紅包文化盛行
 - (2) 法規不健全
 - (3) 公共建設不足，公路、機場、港口等基礎設施仍待加強
 - (4) 週邊支援產業不足，原料、副料及零組件仍須仰賴進口
- 越南政府因應其基礎建設改善之需求，近年來持續推動交通、能源、環保工程等三大類基礎建設，而此機場標案也包含在此越南基礎建設改善規劃中。
 - 國內業者在國內機場建案工程(包括機場土建設計、監造及軟體系統搭配等具備相關能力)，亦在海外承接相關工程等建造實績。
 - 綜合評估建案地點、建案需求及國內業者實力，建議國內業者可進一步聯繫相關窗口進行備標作業，但同時也須注意所條列的風險事項。

8. 其他

- (1) 資訊提供單位：中華民國對外貿易發展協會
- (2) 聯絡窗口：
 - ◆ 駐處承辦人聯絡方式：
 - 台灣貿易中心駐胡志明市辦事處
 - 沈丕貴
 - 84-8-39390837

E-mail:samphuiquay@taitra.org.tw

◇ 本案在地國聯繫方式:

台灣貿易中心駐胡志明市辦事處

施玉龍經理

84-8-39390837

E-mail:jules@taitra.org.tw

(3) 資料收集來源:

http://www.taitraesource.com/page03.asp?mag_id=66297

(4) 參考資訊

1. Vietnam parliament approves construction of huge hub airport(附件 1)

<http://www.thanhniennews.com/politics/vietnam-parliament-approves-construction-of-huge-hub-airport-47116.html>

2. Vietnam approves major construction of Long Thanh Airport(附件 2)

http://www.upi.com/Top_News/World-News/2015/06/25/Vietnam-approves-major-construction-of-Long-Thanh-Airport/1151435253962/

標案分析(二)- 越南胡志明市的都市捷運系統建案

越南因相對穩定之政治發展、低廉的人工工資及政府單位近年來所強調的經濟發展決心，已成為國人關注的海外市場，並且國內業者在捷運建案已有國內外多項實績，因此將相關建案資訊條列如下，作為後續業者備標之參考。

1. 建置預定區域：胡志明市
2. 建設期程：2014 年動土至 2022 年全案完工
3. 工程規模：25 億美元
4. 建案內容/項目：

胡志明市：胡志明市規劃興建 6 條捷運項目，其中僅兩條路線已開始動工興建，均將於 2017 年以後完工。據胡志明市都市鐵運管理委員會裴副主委克瓊(Bui Khac Huynh)於本(2015)年 4 月 29 日下午召開記者會中表示，截至今，胡志明市第 5 號捷運地鐵(第 1 階段連接西貢橋及新平郡柒賢地區)業已完成 15 億 6,000 萬歐元(約 41 兆 6,000 億越盾)的募款工作，其中西班牙政府、亞洲發展銀行、歐洲投資銀行及德國重建銀行分別提供 2 億 7,500 萬、4 億 7,500 萬、1 億 5,000 萬及 2 億歐元的投資資金，越南亦將斥資約 4 億 6,000 萬歐元的對應資金。

目前，胡志明市刻正推動第 1 號捷運地鐵(連接胡志明市濱城市場及仙泉游樂區)之興建，預計將在 2017 年中旬竣工，2018 年進行試車

後將於 2020 年正式投入服務。另該市第 2 號捷運地鐵(毗連濱城市場與及參良區，投資金額為 13 億 7,000 萬美元)正展開土地徵收的工作及舉辦招標中，預計將於 2022 年完工。該兩條路線均有日本與歐洲各國資金投入。兩條路線共約投入 25 億美元。

5. 我國業者國內建案經驗：

- 榮工工程－台北捷運、高雄捷運、桃園機場捷運
- 中華工程－台北捷運
- 中興工程－台北捷運、高雄捷運、台中捷運顧問服務、高雄輕軌顧問服務
- 林同棧工程顧問－台北捷運、高雄捷運顧問服務、基隆市山線捷運綜合規劃
- 台灣世曦－台北捷運、桃園機場捷運
- 亞新工程－台北捷運、高雄捷運、桃園機場捷運
- 新亞建設－桃園機場捷運、高雄捷運、台北捷運
- 中鼎工程－台北捷運、高雄捷運、桃園機場捷運

6. 我國業者國外建案經驗：

- 林同棧工程顧問－新加坡捷運、委內瑞拉卡拉卡斯捷運、馬來西亞吉隆坡捷運
- 榮工工程－新加坡捷運
- 中鼎工程－新加坡捷運
- 台灣世曦－印尼雅加達捷運、泰國曼谷捷運
- 亞新工程－泰國曼谷捷運、新加坡捷運

7. 辦公室建議：

- 建案優勢：
 - (1) 越南相較東南亞國家穩定政治發展穩定
 - (2) 地理位置接近台灣，國內支援容易
 - (3) 當地人工工資低廉
 - (4) 台灣廠商已在當地深耕多年
 - (5) 當前國內業者關心的重要海外市場
- 建案風險：
 - (1) 越南政府人治色彩濃厚，佣金或紅包文化盛行
 - (2) 法規不健全
 - (3) 公共建設不足，公路、機場、港口等基礎設施仍待加強
 - (4) 週邊支援產業不足，原料、副料及零組件仍須仰賴進口
- 越南政府因應其基礎建設改善之需求，近年來持續推動交通、能源、環保工程等三大類基礎建設，而此捷運標案也包含在此越南基礎建設改善規劃中。
- 國內業者在國內外捷運工程系統之設計及建造上均有建置實力，

如國內高雄臨海及新北市淡海輕軌工程，以及東南亞新加坡湯申線捷運工程等建案。

- 綜合評估建案地點、建案需求及國內業者實力，建議國內業者可進一步聯繫相關窗口進行備標作業，但同時也須注意所條列的風險事項。

8. 其他

(1) 資訊提供單位：中華民國對外貿易發展協會

(2) 聯絡窗口：

◇ 駐處承辦人聯絡方式：

台灣貿易中心駐胡志明市辦事處

沈丕貴

84-8-39390837

E-mail:samphuiquay@taitra.org.tw

◇ 本案在地國聯繫方式：

台灣貿易中心駐胡志明市辦事處

施玉龍經理

84-8-39390837

E-mail:jules@taitra.org.tw

(3) 資料收集來源：

http://www.taitraresource.com/page03.asp?mag_id=66297

(4) 參考資料：

Ho Chi Minh City Metro, Vietnam-railway technology(附件 3)

<http://www.railway-technology.com/projects/vietnammetro/>

Ho Chi Minh City Metro-Wikipedia(附件 4)

https://en.wikipedia.org/wiki/Ho_Chi_Minh_City_Metro

標案分析(三)- 巴西 2015-2018 年物流投資計畫(PIL)

巴西因市場廣大、幣值穩定及低通貨膨脹率等因素，在 2004 年被稱作「金磚四國」，吸引國內投資目光，且目前因 2016 年舉辦奧運的需求，近期已釋放出改善及增建公路、鐵路、機場等基礎建設建案，為國內業者可搶攻的海外商機，因此將相關建案資訊條列如下，以供我國業者參考。

1. 建置預定區域：聖達卡答麗那等 7 個州
2. 建設期程：2015/6/10~2018/12/31
3. 工程規模：661 億元巴幣(約 200.6 億美元)
4. 建案內容/項目：

為改善巴西物流方面之基礎建設，巴西聯邦政府計畫 2015-2018 年在公路拓寬、改善及現代化工程。計畫將聖達卡答麗那等 7 個州總長

2,603 公里之 BR476 等 9 條公路民營化，而 2016 年預定民營化則包括培南布可等 11 州 BR101 等全長 4,551 公里公路。

5. 我國業者國內建案經驗：

- 林同棧工程顧問—國道 1 號拓寬工程、西濱快速道路
- 中華工程—屏鵝公路拓建工程、國道 1 號拓寬工程
- 中興工程顧問—北宜高速公路建設計畫
- 榮工工程—國道 1 號、東西（中部）橫貫公路、北部橫貫公路
- 台灣世曦—五楊高架、國道 2 號拓寬工程
- 亞新工程—台灣國道 1 號及 3 號高速公路
- 中鼎工程—國道二號
- 新亞建設—國道 1 號拓寬工程、北宜高速公路、蘇花公路改善工程

6. 我國業者國外建案經驗：

- 台灣世曦—印尼道路工程、越南道路工程
- 榮工工程—印尼泗水高速公路、菲律賓馬尼拉高架道路工程、馬來西亞新巴生谷高速公路、泰國道路工程
- 亞新工程—中國西安交通路網及大眾運輸系統規劃、哥斯大黎加 San Carlos 公路、泰國道路工程、新加坡道路工程

7. 辦公室建議：

➤ 建案優勢：

1. 2004 年巴西因地大物博，幣值穩定及通貨膨脹率低等因素，被稱作「金磚四國」，已成為我國工商企業界投資矚目焦點。
2. 巴西目前為拉丁美洲最大經濟體，也是我國在此區域最大貿易夥伴國之一。
3. 近年來巴西發展快速但其經濟部分卻因缺乏基礎建設而受限制。但因應 2016 年奧運，巴西將釋放大量公路、鐵路、機場和運動館等基礎建設建案。

➤ 建案風險：

1. 巴西運輸服務不完善，收費高，且運輸過程貨物經常發生損壞或被盜。
 2. 巴西港口發展緩慢，進口貨物致滯港問題嚴重。
 3. 法令、法規繁多複雜又未明確，且經常頒布臨時措施，令國外業者能以適應。
 4. 雇用和解聘員工困難，時常有勞資糾紛。
- 國內業者在高速公路工程設計監造及試營運上均有相當經驗(包括知名的五楊高架及國道高速公路，以及東南亞如印尼泗水速公路建案等建案經驗)。
 - 綜合評估建案地點、建案需求及國內業者實力，建議國內業者可

進一步聯繫相關窗口進行備標作業，但也須同時注意前述條列的風險事項。

8. 其他

(1) 資訊提供單位：中華民國對外貿易發展協會

(2) 聯絡窗口：

◇ 駐處承辦人聯絡方式：

巴西台灣貿易中心

宋三怡(Mr.)

55-11-3283-1811

E-mail:brazil@taitra.org.tw

◇ 本案在地國聯繫方式：

Secretaria de Planejamento e Investimentos Estratégicos

(巴西企劃部策略投資暨企劃局)

Mrs. Josilene Evangelista Alves de Andrade(辦公室主管)

55-61-2020-4036/2020-4080/2020-4538

E-mail:agenda.spi@planejamento.gov.br

(3) 資料收集來源：

<http://www.planejamento.gov.br/assuntos/program-of-investment-in-logistics-pil>

(4) 參考資料：

Program of Investment in Logistics-road (附件5)

17899 1

Vietnam parliament approves construction of huge hub airport

Thanh Nien News

Thursday, June 25, 2015 11:49

Email

Print



Deputies of Vietnam's National Assembly vote for the new Long Thanh airport project during a parliament session in Hanoi June 25, 2015. Vietnam plans to build an ambitious new \$16-billion airport as an eventual competitor to sprawling airline hubs in Bangkok and Singapore, on a site that is bigger than both combined. Photo: Reuters

The National Assembly has given the green light for a US\$15.8 billion airport outside Ho Chi Minh City, ending lingering debates on a controversial major project that has raised eyebrows over its *raison d'être*.

The lawmakers overwhelmingly passed a resolution Thursday allowing the government to forge ahead with construction on the Long Thanh International Airport, touted as the country's most ambitious infrastructure project yet.

Long Thanh is designed to handle 100 million passengers and five billion tons of goods a year after 2050. The government envisages it will eventually become a regional transit hub and rub shoulders with the famous airports in Hong Kong, Singapore and Bangkok.

The airport will be built in the southern province of Dong Nai, about 40 kilometers to the northeast of HCMC. Vietnam plans to build the airport in three separate phases with the

first one slated to begin in 2018. The estimated cost of the first phase is \$5.2 billion.

The second phase of Long Thanh would be built from 2030 to 2035, costing \$4 billion. The third stage would run from 2040 to 2050, worth \$6.6 billion, preliminary figures show.

When it goes into operation in 2025, Long Thanh will be able to serve 38 million passengers annually.

The country's biggest airport, Tan Son Nhat in HCMC, has a designed capacity of 20 million passengers. Hanoi's Noi Bai Airport opened a second terminal last year worth \$900 million, nearly doubling its capacity to 22 million passengers.

Public debt concerns

Proponents of the project often say an advanced airport is quite important to Vietnam to bring the country on par with the world.

They had urged the National Assembly – Vietnam's legislature – to approve the project soon and hash out differences on details and costs later.

But naysayers argue that construction of the airport is not that urgent, given Vietnam's significant public debt.

These critics are concerned that the project could aggravate the financial quagmire of the country, where each of its 90 million people already bears a per capita public debt of some \$900.

The idea of the airport was first mooted a decade ago aiming to lure large foreign interest in contracts from construction and technology to services and retail.

France's Aeroports de Paris SA has already approached Vietnam's government with a view to becoming a strategic partner with state-run Airports Corporation of Vietnam, Reuters quoted a Vietnam News Agency report in March.

The initial cost of the region's newest hub, Bangkok's Suvarnabhumi Airport, was \$4.6 billion with annual capacity of 45 million passengers. Singapore's Changi Airport plans to double yearly capacity to 130 million passengers in a decade, the newswire said.

Vietnam approves major construction of Long Thanh Airport

The \$15.8 billion project will be completed by 2050.

By Ed Adamczyk

| June 25, 2015 at 3:03 PM

Follow

3Comments



The site of Long Thanh International Airport near Ho Chi Minh City, Vietnam. The construction project is expected to be completed by 2050. Photo courtesy of wikimedia.org/ Odessey.

HO CHI MINH CITY, Vietnam, June 25 (UPI) -- Vietnam approved a massive airport construction project Thursday, intended to make Ho Chi Minh City a regional transport hub.

The National Assembly voted overwhelmingly in favor of the 336.7 trillion

Vietnamese dong (\$15.8 billion) project, which will be built in three phases, from now until 2018, from 2020 to 2035 and from 2035 to 2050. By 2050, the Long Thanh International Airport is expected to be equipped to handle 100 million passengers and five billion tons of cargo annually. The government seeks to make the airport comparable to those of Hong Kong, Singapore and Bangkok as an international hub.

Critics were concerned over the cost, especially since the Vietnamese economy has acquired significant public debt. Investment in the airport will be derived from the national budget, government development assistance and private capital.

The airport is expected to reduce the load on Ho Chi Minh's aging Than Son Nhat airport.

Ho Chi Minh City Metro, Vietnam

122

+ Key Data

Constituted in 1976, the Socialist Republic of Vietnam has emerged from a modern history including colonial rule and war to become one of south-east Asia's fastest growing economies (6.23% GDP growth in 2008), with unexploited reserves of coal, iron ore and oil. There has been rapid and continuing growth of the two dominant cities, capital Hanoi (pop. approx 6.4 million) in the north and, around 1,100km to the south, the largest settlement and economic centre, Ho Chi Minh City (formerly Saigon, approx 8 million in the metropolitan area).

Contrasting with important trading partner Germany, a country with a very similar size and population, railway transport has played only a minor part in Vietnam's development. Almost two-thirds of the predominantly metre-gauge heavy rail network is accounted for by the line between Hanoi and Ho Chi Minh City (HCMC), and there is little rail application in urban transit.

However, consideration has turned from reliance on buses – although public transport use for city journeys has been as low as 5% – to creating a metro system to address the problems of congestion, protracted journey times and extreme pollution.

The latter is a particular problem due to the high use of motor scooters/bikes – there is an estimated four million around the city – and with increasing road use in general, the accident and casualty rate has further encouraged the case for rail.

In October 2009, the Vietnamese Government sanctioned plans for building the underground metro line of the project at a cost of about \$1.2bn. Spanish consulting company Ardanuy Ingenieria won a feasibility study contract in October 2009 to provide solutions to build Line 4 of the six-line project.

In April 2009 Spanish firm Idom Ingenieria Consultoria was awarded the contract to conduct feasibility studies for Line 5 and Line 6 of the metro. The two feasibility studies are expected to cost \$1.7m and was completed within a year.

GEV signed an agreement with Ho Chi Minh City's Management Board of Urban Railway to construct phase one of Line 5 between Saigon Bridge and Bay Hien Intersection in September 2010. The work is scheduled to begin in April 2011.

The construction of Metro line 2 began in August 2010 and is planned to be completed by 2015, with commercial services scheduled to commence in 2016. The funding is partly from the government and loans from the Overseas Development Administration, Asian Development Bank and European Investment Bank.

The project

Ten years into the formation of the current state, Vietnam loosened domestic economic controls and began supporting foreign investment in the country. Attracting interest from several countries, this process has helped to create a substantial project for Vietnam's first rail-based rapid transit system. At an estimated \$1.1bn cost, the government has approved the scheme for the first line.

The Japan Bank for International Cooperation is providing 83% of the finance, the remainder coming from the HCMC municipal government. The metro route's consultant and designer is the Japanese Nippon Koei Group, who has maintained a presence in Hanoi since 1991. By March 2008, German interests in Vietnam's future metro developments had also been strengthened following ministerial visits between the countries. There have been indications of financial support via the German public sector KfW Entwicklungsbank for later line projects.

"With increasing road use in general, the accident and casualty rate has further encouraged the case for rail."

Line routes

The metro project will have six lines. Line 1 of the project is 19.7km long and consists of a 2.6km-long underground section and a 17.1km elevated section. Line 1 will connect Ben Thanh Market in the central area to the amusement park at Suoi Tien in District 9. The line goes underground from Station 1 at Quach Thi Trang Roundabout area in Ben Thanh Market. It consists of two horizontally aligned two tunnels. After Station 3 at Ba Son the line shifts from underground to elevated. The underground section has a total of three underground stations. Line 1 also consists of a crossing at Saigon River.

Line 2 of the project will be 10.18km long and will run between Ben Thanh Market and Tham Luong. Line 2 will contain 11 stations. Line 3 will be 10.4km long and will run between Ben Thanh Market and Bin Tan District.

Line 4 will be 16km long and will begin from Lang Cha Ca traffic circle and end at Van Thanh Park in Binh Thanh district. Line 5 will span 17km between Can Giuoc Bus Station in District 8 and Thu Thiem New Urban Town in District 2. The route for Line 6 will be 6km long and run between Ba Queo in Tan Binh District and Phu Lam in District 6.

Infrastructure

Ho Chi Minh City occupies a low-lying site 60km (37 miles) from the South China Sea coast, and difficult ground conditions are envisaged. Restrictions may need to be placed on building in the areas expected to be needed for the metro project. The start of construction was announced in February 2008, with work beginning on a \$28m system depot in Long Binh Ward, District 9.

The tenders for construction were invited in 2008, and compensation and site clearance for the project was completed by 2009. Although system aspects are to be confirmed, the 1,435mm gauge will differ from the country's other lines.

Completion of Line 1, which is due to have 11 surface and three sub-surface stations, also related bus stations, is expected in 2014. There is a commitment to make the system accessible for users with physical disabilities and for bus routes to act as feeder services to rail. Planning indicates several interchange points on the system as later lines are opened.

Rolling stock

The supplier of rolling stock and other equipment is yet to be specified. Six-car trains are to be deployed with a target daily loading of 162,000 passengers up to 2020. An end-to-end time of around 29 minutes is planned, with a train every five minutes through a 20-hour operational day.

"The HCMC transport master plan proposes five further metro lines which, with Line 1, will approximate to 107km (66 miles)."

No suppliers have been yet announced, although the potentially diverse funding arrangements may lead to rolling stock being sourced from several companies and countries.

Those with rapid transit experience who have expressed interest have included Japanese conglomerate Sumitomo Corporation (lead contractor for the Manila MRT-3 Phase 1 project) and two Europe-based companies who are already active in Vietnam, Alstom and Siemens.

Japan's Kawasaki Heavy Industries has also expressed its interest in providing locomotives and carriages for the project. Neighbouring China may also see opportunities with this emerging market.

Signalling and communications

Signalling aspects are to be announced. Along with other potential suppliers, French company Alstom is already active in this area of the market through their work with Vietnam Railways on the existing rail system.

The future

Anticipated completion date for the first line is 2014. The HCMC transport master plan proposed five further metro lines which, with Line 1, will approximate to 107km (66 miles). The same plan, which also included three monorail routes totalling 37km (23 miles), indicated completion of the schemes by 2020, by which time the population forecast is 13.5 million. With Ho Chi Minh City as Vietnam's main economic centre, it remains to be seen if the earlier studies for rapid transit in the capital, Hanoi, will be revived in some form.

Ho Chi Minh City Metro

From Wikipedia, the free encyclopedia

The **Ho Chi Minh City Metro** (Vietnamese: *Dự án đường sắt đô thị Thành phố Hồ Chí Minh*) is a proposed rapid transit network that will serve Ho Chi Minh City in Vietnam. The network was first proposed in 2001^[2] as part of a comprehensive public transport network plan including Ho Chi Minh City and neighbouring provinces, with the aim of avoiding the severe traffic congestion problems that have affected other Asian cities (such as Hanoi).^[3] Most of the network is currently in the planning stages, with projects for different lines advancing as funds become available. The network's first line, connecting Bến Thành Market and Suối Tiên Park in District 9, was originally scheduled for completion in 2017–18,^{[4][5]} but is now scheduled for completion in 2020.^[1] Construction of a second line began in August 2010.^[6]

Contents [hide]
1 Plan
1.1 Line 1
1.2 Line 2
1.3 Line 3
1.4 Line 4
1.5 Lines 5-6
1.6 Other lines
2 Initial 2001 plan
2.1 Priority lines
2.2 Other lines
2.3 Technical specifications
3 Fares and ticketing
4 See also
5 Notes and references
6 External links

Ho Chi Minh City Metro



The Logo of HCMC Metro

Overview

Owner	Management Authority for Urban Railways
Locale	Ho Chi Minh City, Vietnam
Transit type	Rapid transit
Number of lines	3 (under construction) 3 (<i>planned</i>)

Operation

Operation will start	2020 ^[1]
Headway	4 minutes ^[2]

Technical

System length	107 km (66.5 mi) (<i>planned</i>)
Track gauge	1,435 mm (4 ft 8 1/2 in) standard gauge ^[2]
Top speed	80 km/h (50 mph) ^[2]

Plan [edit]

The Ho Chi Minh City Metro project is managed by the city's Management Authority for Urban Railways (MAUR), a government unit working directly under the Chairman of the People's Committee of Ho Chi Minh City.^[7] The most recent plan put forth by this unit calls for no less than six urban rail lines. The city's transport development master plan to 2020 envisages developing three monorail or light rail lines

with a total length of 37 kilometres (23 mi) and six underground metro routes with a total length of 107 kilometres (66 mi).^[8] Bến Thành Market in District 1, already a major hub for bus traffic, will become a major hub connecting several lines.

2007 master plan^[9]

Line description	Length (km)	Stations	Route
Line 1	19.7	14	Bến Thành Market–Suối Tiên Park, District 9
Line 2	11.3 ^[10]	11	Bến Thành Market–Tham Luong, District 12
Line 3	10.4	?	Bến Thành Market–Bình Tân
Line 4	16	?	Làng Chà Ca, Tân Bình–Van Thanh Park, Bình Tân
Line 5	17	?	Thủ Thiêm, District 2–Cần Giuoc, District 8
Line 6	6	?	Ba Queo, Tân Bình–Phu Lam, District 6

Line 1 [edit]

On April 10, 2007, the city government approved the US\$1.1 billion Line 1. It will run for 19.7 km from Bến Thành Market, underground for 2.6 km past the Opera House,

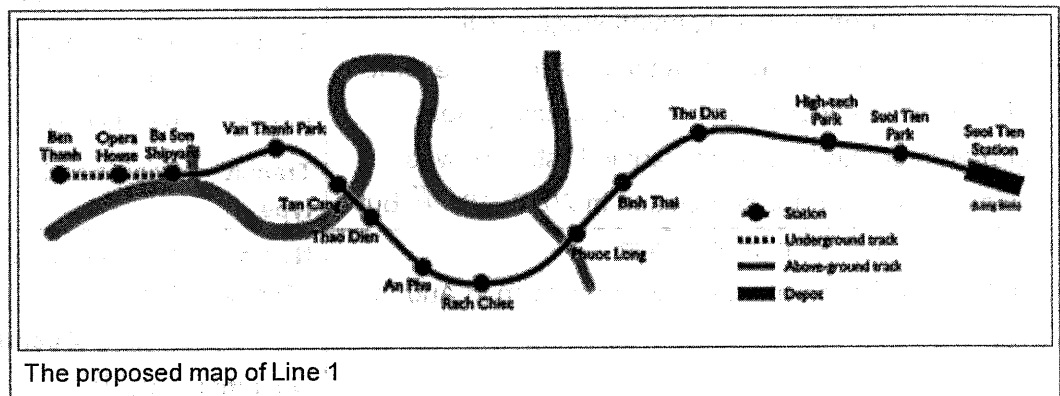
Ba Son Shipyard, and then cross the Saigon River on an elevated track, passing through District 2 on the way to Suối Tiên Park and the terminus in Long Bình in District 9. In all, Line 1 will include 14 stations, with three of these (Ben Thanh, the Opera House and Ba Son) being underground.^[9]

Work to build a US\$28 million depot in Long Binh for Line 1 began on February 21, 2008.^{[11][12]} Construction of the elevated section, east of the Saigon River, started in August 2012.^[13] The contract for the 3-station underground segment was to follow shortly after. The Japan Bank for International Cooperation will provide US\$904.7 million to meet 83% of the cost, and the city government US\$186.6 million.^[8]

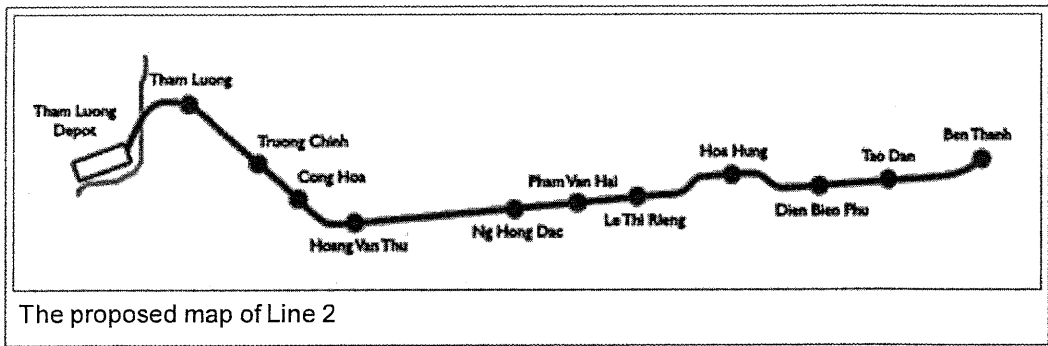
Completion of Line 1 was originally planned for early 2018,^[13] but is now planned for 2020.^[1] Planners expect the route to serve more than 160,000 passengers daily upon launch, increasing to 635,000 by 2030 and 800,000 by 2040. All stations along the route are expected to accommodate the disabled, with automatic ticket vending machines, telephone booths, restrooms, subway doors and information bulletins accessible to the handicapped and visually impaired.^[12]

Line 2 [edit]

Plans for the US\$1.2 billion Line 2 were submitted in November 2008 by MVA Asia Limited^[14] and approved by the government in December 2008. This line will include 11 stations stretching between Bến Thành Market and Tham Luong in District 12, following a route through Phạm Hồng Thái, Cach Mang Thang Tam and Trường Chinh streets. Out of the main section's total length of 11.3 km, 9.6 km will be underground.^[10] Major stations will include Trường Chinh (Tay Ninh Bus Station),



near Tan Son Nhat Airport, and Hòa Hưng, near Saigon Railway Station. An extension of Line 2 east of Bến Thành Market to Thủ Thiêm New was originally proposed by MVA; this extension would bring the line's total length to 19 km.^{[4][15]}

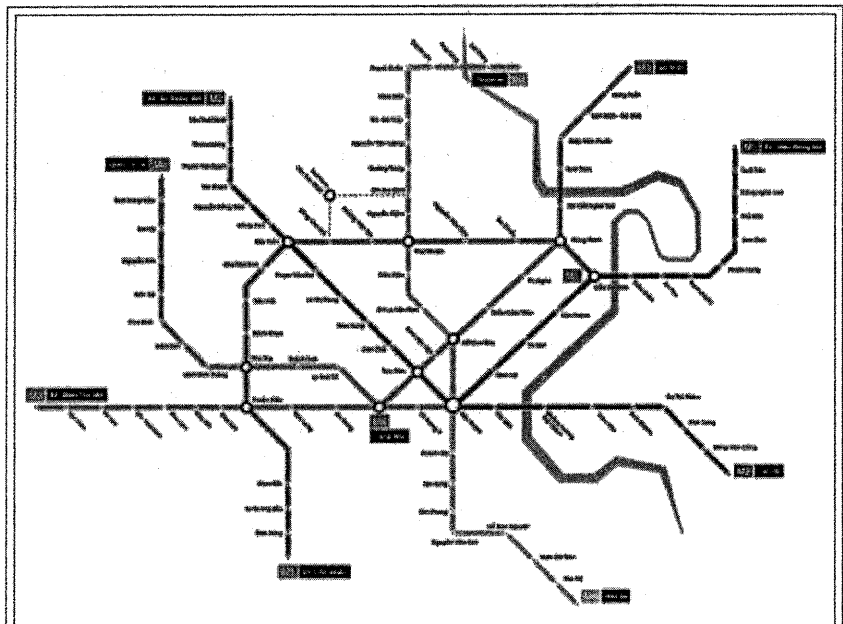


The proposed map of Line 2

The project's projected cost will be financed by the German Bank for Reconstruction, the Asian Development Bank and the European Investment Bank.^{[4][16]} In February 2008, the German government announced EUR 86 million of funding towards the project.^[11] Construction officially began in August 2010,^[6] starting with 25 hectare-wide Tham Luong Depot, for opening in 2016.^[10]

Line 3 [edit]

The third metro line would span the distance between Bến Thành Market to the east and An Lac in Bình Tân District to the west,^[9] passing through Districts 5 and 6—the area known as Cholon, or "Chinatown". Fewer details have emerged about the third line than the others, although the city's People's Committee is reported to have approached the French government for funding and support.^[17] A 2006 document suggested a possible extension of Line 3 north of Bến Thành Market to Thủ Đức District, although officials have yet to confirm whether this extension will be built.^[15]



The proposed map of the future network (6 lines)

Line 4 [edit]

Spanish consulting company Ardanuy Ingenieria won a contract in October 2009 to provide a feasibility study of Line 4 of the six-line project.^[9] This line would stretch 16 km from Lang Cha Ca crossroad in Tân Bình District (near Tan Son Nhat Airport) to Van Thanh Park in Bình Thạnh District.

Lines 5-6 [edit]

On April 4, 2009, Spain's IDOM, Ingeniería, Arquitectura y Consultoría S.A. signed a contract with HCMC Urban Railway to provide a feasibility study for lines 5 (from Thủ Thiêm, District 2 to Can Giuoc, District 8 – 20 km) and 6 (Ba Queo, Tân Bình to Phu Lam, District 6 – 6 km). The study was to

be completed within 12 months.^[18]

In September 2010 Spanish company GEV signed an agreement with HCM City's Management Board of Urban Railway to build the first phase of the Metro 5 route between Sai Gon Bridge and Bay Hien Intersection in Tân Bình District. Work on the route is expected to begin by the end of April 2011.^[19]

In September 2013 agreement was reached with the Asian Development Bank, the European Investment Bank, and the Spanish Government to provide Euro850m to finance the construction of line 5 - with any additional provided by the Vietnamese Government. A revised construction start of 2015 was provided.^[20]

Other lines [edit]

China Shanghai Corporation for Foreign Economic & Technological Cooperation (Sfeco) has carried out a pre-feasibility study for a 12 km Nguyen Oanh-Nguyen Van Linh Metro route, between Gò Vấp District and District 4.^[21] A 2006 document indicated that a subsidiary line connecting the line to Tan Son Nhat Airport and a southward extension to Nhà Bè District may have been considered.^[15]

Initial 2001 plan [edit]

According to the original master plan submitted in February 2001, the inner metro system would comprise the following routes, many of which have been adapted or superseded by the more recent 2007 plan. The plan was originally expected to cost US\$1.5 billion over 10 years, as part of a US\$3.35 billion program to build a rail network serving Ho Chi Minh City and surrounding provinces.^[22]

2001 master plan^{[2][3]}

Line description	Length (km)	Stations
Northwest–Southwest (including Bến Thành Market–Tan Son Nhat Airport)	46.86	44
Inner Belt (including Bến Thành Market–Bình Tây Market, Cholon)	43.14	45
Hòa Hưng, District 10–Hanoi Highway–Thủ Thiêm, District 2	21	18
Bến Thành Market - District 2–District 9 - Thủ Đức District	27.5	18
Hòa Hưng, District 10–Hiệp Bình Chánh, Thủ Đức District–Biên Hòa	46	42

Priority lines [edit]

Three lines were considered a priority of the 2001 plan, two of them fully or partly underground and one fully elevated:^[3]

1. A 7.5-kilometre (4.7 mi) north-south line, partly underground and partly elevated, connecting Tan Son Nhat Airport and Bến Thành Market, via Hòa Hưng in District 10;
2. A 7-kilometre (4.3 mi) east-west line, fully underground, connecting Bến Thành Market with Bình Tây Market in Cholon, similar to Line 3 of the 2007 plan;
3. An 11-kilometre (6.8 mi) southwest-northeast line, fully elevated, connecting Hòa Hưng in District 10 to Binh Trieu in Thủ Đức District, following existing railway lines.

Proposed extensions to these lines included: extending the Tan Son Nhat line north to Quang Trung Software Park, eventually expanding further to the northwest and southwest to create a much longer 47 km line; extending the Bình Tây/Cholon line to form a circular "Inner Belt" Line, which would loop around the airport; and building a doubletrack elevated express line to extend the Hòa Hưng-Binh Trieu line out to Biên Hòa.^[3]

Other lines [edit]

Other lines to be built according to the 2001 plan included a 27.5-kilometre (17.1 mi) line connecting Bến Thành Market to Thủ Đức District, via Districts 2 and 9, similar to (but distinct from) Line 1 of the 2007 plan, and a 16-kilometre (9.9 mi) line from Hòa Hưng in District 10 to Bình Chánh District.^[3]

Several more inter-city rail lines were planned, including a Long Binh–Hóc Môn route, a Hóc Môn–Bình Chánh–Tiền Giang route, a Thủ Đức–Long Bình–Long Thành–Vũng Tàu route and a Thủ Thiêm–Long Bình–Vũng Tàu route.^[2]

Technical specifications [edit]

The 2001 plan proposed the following technical parameters.^[2]

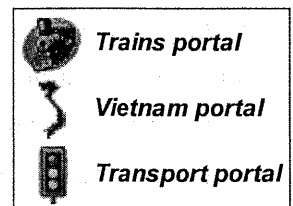
- Platform length: 125 metres (410 ft)
- Average distance between stations 700–1,300 metres (2,300–4,300 ft)
- Maximum speed: 80 kilometres per hour (50 mph)
- Headway: 4 min. (min. 2 min.)
- Gauge: 1,435 mm (4 ft 81⁄2 in) standard gauge
- Vehicle width: 3 metres (9.8 ft)

Fares and ticketing [edit]

To encourage high ridership, fares on the Ho Chi Minh City Metro network will be set low, on the order of VND 2,500 (about US\$0.16). By comparison, bus fares within the city are generally VND 3,000 (as of 2013, bus fares are at around VND 5,000 to VND 7,000 ^{[23][24]}). A common farecard, valid on both the metro network and bus network, will be made available as well.^[25]

See also [edit]

- Transport in Vietnam
- Megaproject
- Hanoi Metro



Notes and references [edit]

References

- ↑ ^{***a b c***} "Ho Chi Minh City selects underground contractors" .*Railway Gazette International*. 26 July 2014. Retrieved 2015-04-25.
- ↑ ^{***a b c d e f g***} Robert Schwandl (2007). "Ho Chi Minh City Metro" .*UrbanRail.net*. Retrieved 2010-05-26.
- ↑ ^{***a b c d e***} "Ho Chi Minh City plans to build a metro network" .*International Railway Journal*. 1 May 2002. Retrieved 2010-05-27.
- ↑ ^{***a b c***} "The work begins: HCM City to have first subway in 2014" .*VietnamNet Bridge*. 30 April 2010.
- ↑ "Work starts on Ho Chi Minh City metro line" .*International Railway Journal*. 24 August 2010. Retrieved 2010-08-24.
- ↑ ^{***a b***} "Ceremony launches work on Ho Chin Minh City metro Line 2" .*Railway Gazette International*. 25 August 2010.

7. [^] "Overview of Management Authority for Urban Railways" . Retrieved2010-04-04.
8. [^] ^{**a**} ^{**b**} M.Vong (10 April 2007). "Vietnam to build first subway with Japanese aid" . *Thanh Nien*. Retrieved2010-05-14.
9. [^] ^{**a**} ^{**b**} ^{**c**} ^{**d**} "Ho Chi Minh City Metro" . *Railway-Technology.com*. Retrieved2010-04-04.
10. [^] ^{**a**} ^{**b**} ^{**c**} "City sets to start construction of metro route No.2" . *Thanh Nien* (Sai Gon Giai Phong). 2 June 2010. Retrieved2010-06-10.
11. [^] ^{**a**} ^{**b**} "Ho Chi Minh City breaks ground" . *Railway Gazette International*. 28 February 2008. Retrieved2010-05-14.
12. [^] ^{**a**} ^{**b**} Duc Trung (18 February 2008). "Vietnam's first subway line ready to break ground" . *Thanh Nien*.
13. [^] ^{**a**} ^{**b**} "Work starts on Ho Chin Minh City metro Line 1" . *Railway Gazette International*. 31 August 2012.
14. [^] Dinh Muoi (30 November 2008). "Plans for HCMC's second metro route submitted" . *Thanh Nien*. Retrieved2010-05-14.
15. [^] ^{**a**} ^{**b**} ^{**c**} MVA Asia Ltd (October 2006). "Preparing the Ho Chi Minh City Metro Rail System Project: Technical Assistance Reports" (PDF). Asian Development Bank. p. 4. Retrieved2010-06-10.
16. [^] Dinh Muoi (11 December 2008). "HCMC's subway route No.2 approved" . *Thanh Nien*. Retrieved2010-05-14.
17. [^] Tran Tam (12 June 2009). "City seeks French support for metro project" . *Thanh Nien*. Retrieved2010-05-14.
18. [^] Minh Quang (7 April 2009). "Spanish firm signs metro deal" . *Thanh Nien*. Retrieved2010-05-14.
19. [^] "Subterranean urban projects receive funds" . *VietName Net*. 13 September 2010. Retrieved2010-09-13.
20. [^] "City Metro Project receives Euro850 million funding" . *SGGP*. 12 September 2013. Retrieved2013-09-12.
21. [^] "China investor likely to replace Russian firms in subway project" . *The SGT Daily*. October 2006. Retrieved2010-05-14.
22. [^] "Ho Chi Minh City Metro Plan" . *International Railway Journal*. January 2001. Retrieved2010-05-26.
23. [^] "Bus fares to be increased since October 1 in Hanoi" . *VNExpress*. 22 August 2012. Retrieved2013-06-01.
24. [^] "Bus fares to be increased in Ho Chi Minh city" . *VNExpress*. 25 December 2012. Retrieved2013-06-01.
25. [^] David M. Lenard (3 November 2004). "Ho Chi Minh's subway dreams" . *Asia Times*. Retrieved2010-06-11.

Bibliography

- MVA Asia Ltd (October 2006). "Preparing the Ho Chi Minh City Metro Rail System Project: Technical Assistance Reports" (PDF). Asian Development Bank. Retrieved 2010-06-10.
- MVA Asia Ltd (October 2006). "Preparing the Ho Chi Minh City Metro Rail System Project: Consultant's Reports" (PDF). Asian Development Bank. Retrieved 2010-06-10.

External links [edit]

- Management Authority for Urban Railways
- Ho Chi Minh at *UrbanRail.net*



Wikimedia Commons has media related to ***Ho Chi Minh City Metro***.

國外採購招標參考資訊 (發布工程商情資訊)

商情類型：歐/亞銀貸款案

分析日期：104年9月

統計歐銀網站(<http://www.ebrd.com/home>)所釋出標案資訊，於9/30日之後截止之標案共計有123件，在其中有市政與基礎建設72件、能源17件及交通34件。本次月份分析之商機類型為港口建設、道路建設及水力電廠建設，因國內廠商在此三個建設領域已於國內外擁有多項建設實績，具備有取得國際標案之實力。標案的分析資訊如下所述：

標案分析(一)-阿爾巴尼亞(Albania)的都拉斯港建案(Port of Durres)

國內業者並無太多與阿爾巴尼亞的交流經驗，但因國內業者已由面臨強震和颱風巨浪的國內港口建造環境下，累積了世界級建港經驗，且透過此建案也可成累計歐銀標案的實績，以利後續取得更多歐銀標案。依此將建案資訊條列如下，作為業者投標之參考。

1. 建置預定區域/地點：阿爾巴尼亞(Albania)都拉斯(Durres)
2. 公告日：16 Sep 2015
3. 截止日：15 Sep 2016 at 23:59 Albania
4. 預估規模：EUR 40 million
5. 資金來源：EBRD
6. 領域分類：交通
7. 建案內容/項目：

The Port of Durres Authority has received a loan from the European Bank for Reconstruction and Development (the Bank) and the European Investment Bank (EIB) and intends using part of the proceeds of the loan for the Rehabilitation and Reconstruction of Quays 7 & 8 at the Port of Durres. The proposed project, which has an overall total estimated cost of EUR 40 million, excluding taxes, will require the procurement of the following works:

- Rehabilitation / Reconstruction of Quays No. 7 & 8

8. 我國業者國內建案經驗：
 - 台灣世曦－麥寮工業專用港
 - 亞新工程－連江縣馬祖福澳國內商港計畫、高雄港埠整體發展計畫(目標年2020)、左營港第二期碼頭工程
 - 中興工程顧問－高雄港第五貨櫃中心第七十八號碼頭場地工程、台灣北部商港計畫

- 榮工工程－高雄港碼頭、基隆港碼頭、安平港
- 9. 我國業者國外建案經驗：
 - 亞新工程－泰國 Laem Chabang Deep Sea Port、斐濟 Suva Port Development
 - 台灣世曦－越南台塑河靜鋼廠 Son Duong 港
 - 榮工工程－烏地吉達軍港、泰國宋卡港碼頭、埃及塞得港碼頭、印尼泗水港碼頭
- 10. 辦公室建議：
 - 建案優勢
 - 1. 政治經濟穩定
 - 2. 阿爾巴尼亞擁有勞動人口豐富，且工資便宜
 - 3. 氣候較穩定，無嚴重的天然災害
 - 建案風險
 - 1. 基礎建設發展不完善
 - 2. 官員腐敗問題嚴重
 - 綜合前述評估國內業者在港口及碼頭工程建案上具有相當的實力(包括國內及離島靠岸諸多知名港口工程，以及東南亞民用軍用港口工程等建案經驗)。
 - 建議國內業者可進一步聯繫相關窗口進行備標作業，但須特別考量潛在的風險。
- 11. 其他：
 - (1) 聯絡窗口：

Xheladin Toro, Project Implementation Unit Director
Ministry of Transport and Infrastructure
Durrës Port Authority
Project Implementation Unit
Address: L.1, Rr “Tregtare” Durrës, ALBANIA
Email: xh.toro@apdurrës.com.al
Tel: (+355) 52 293432
Fax: (+355) 52 223115
 - (2) 資料收集來源：

EBRD Website
<http://www.ebrd.com/work-with-us/procurement/p-pn-150916c.html>

標案分析(二)-哈薩克(Kazakhstan)的 Kurty – Buribaytal 道路再造建案

因哈薩克為中亞地區最大經濟體，且我國外貿協會在當地設有貿易中心，再者我國業者在於道路建設在國內外已有長久且豐富的建設經歷，因此特將此標案資訊條列如下，以利國內業者進行後標案準備。

1. 建置預定區域/地點：哈薩克(Kazakhstan)的 Kurty - Buribaytal
2. 公告日：15 Jul 2015
3. 截止日：14 Jul 2016 at 23:59 Kazakhstan
4. 預估規模：US\$688 million
5. 資金來源：EBRD
6. 領域分類：交通
7. 建案內容/項目：

Republic of Kazakhstan intends using the proceeds of a loan from the European Bank for Reconstruction and Development (the “Bank”) for a project to reconstruct and upgrade a 81 km road section between villages Kurty and Buribaytal (part of the Center-South Corridor, which connects Almaty and Astana). The proposed project, which has a total estimated cost of US\$ 688 million equivalent, will require the procurement of the following goods, works and services:

 - Civil works for reconstruction of 81 km of Kurty - Buribaytal road, km 2214 – km 2295;
 - Civil works for reconstruction of other 147 km of Kurty - Burilbaytal road;
 - Consultancy services for the supervision of the civil works;
 - Consultancy services - assessment of new ways of financing in the road sector.
8. 我國業者國內建案經驗：
 - 林同棧工程顧問－國道 1 號拓寬工程、西濱快速道路
 - 中華工程－屏鵝公路拓建工程、國道 1 號拓寬工程
 - 中興工程顧問－北宜高速公路建設計劃
 - 榮工工程－國道 1 號、東西（中部）橫貫公路、北部橫貫公路
 - 台灣世曦－五楊高架、國道 2 號拓寬工程
 - 亞新工程－台灣國道一號及三號高速公路
 - 中鼎工程－國道二號
9. 我國業者國外建案經驗：
 - 台灣世曦－印尼道路工程、越南道路工程
 - 榮工工程－印尼泗水高速公路、菲律賓馬尼拉高架道路工程、馬來西亞新巴生谷高速公路、泰國道路工程
 - 亞新工程－中國西安交通路網及大眾運輸系統規劃、哥斯大黎加 San Carlos 公路、泰國道路工程、新加坡道路工程
10. 辦公室建議：
 - 哈薩克為中亞地區最大經濟體，目前政治經濟穩定，我國之外貿協會已於 2004 年在哈薩克的阿拉木圖設有「阿拉木圖台灣貿易中

心」，可於當地提供協助。但須注意由於哈薩克位居中亞，台灣如要運送資源到當地，運費相對昂貴。

- 綜合前述評估國內業者在公路工程設計監造及試營運上均有相當經驗(包括知名的五楊高架及國道高速公路,以及在印尼泗水等海外高速公路建案等經驗)。
- 建議國內業者可進一步聯繫相關窗口進行備標作業。

11. 其他：

(1) 聯絡窗口：

Committee of Roads of the Ministry of Investments and Development
Republic of Kazakhstan

Address: Kabanbai-Batyr st. 32/1, Transport Tower, office 612

Astana, Kazakhstan

Tel.: +7 (7172) 75 46 39, 75 46 40

E-mail: a.gabdullina@mid.gov.kz, k.utepberegnoy@mid.gov.kz

(2) 資料收集來源：

EBRD Website

<http://www.ebrd.com/work-with-us/procurement/p-pn-150713b.html>

標案分析(三)－ Qairokkum 水力電廠再造建案

在塔吉克(Tajikistan)是個位於中亞，人口 800 萬的國家，水資源豐富，基礎建設並不完善，而近年來在世界銀行、亞洲開發銀行、歐洲復興開發銀行等國際金融機構的援助下，有多個基礎建設相關建案釋出，而此建案即是由歐銀所援助的水力電廠建案，為近期少數的水力電廠建案，可為國內水力電廠建造業者累積歐銀標案的機會。標案的重要資訊條列如下。

1. 建置預定區域/地點：塔吉克(Tajikistan)
2. 公告日：24 Jul 2015
3. 截止日：24 Jul 2016 at 23:59 Tajikistan
4. 預估規模：EUR 157 million
5. 資金來源：EBRD loan processs and PPCR loan and grant
6. 領域分類：能源工程
7. 建案內容/項目：

The Open Joint Stock Company Barqi Tojik (BT) is a 100% state-owned vertically integrated power utility responsible for generation, transmission and distribution of electricity in Tajikistan. BT intends using the proceeds of a loan from the European Bank for Reconstruction and Development [the Bank] to rehabilitate the hydro-mechanical and electro-mechanical equipment of the existing Qairokkum hydro power plant under present and future climatic conditions and increase the existing installed capacity from

126MW to 174MW by installing turbines with greater rated capacity. The Project will also raise the safety level of the power plant, the dam and the reservoir and strengthen the resilience of the plant against adverse effects of climate change. The Project will be implemented in two phases with the total investment amount of about EUR 157 Million. The EBRD loan in the first phase is expected to be in the range of USD 50 Million. This project is co-financed with Pilot Program for Climate Resilience (PPCR) of the Climate Investment Funds (CIF) which will provide a grant of USD 11 million and concessional loan of USD 10 million.

The proposed project will require the procurement of the following goods, works and services:

- Power House and Concrete Dam Rehabilitation
 - Supply and Installation of Hydraulic Steel Components, Turbines and Electromechanical Equipment
 - Consulting Services to support BT's Project Implementation Unit (PIU) – Selection Procedure at its final stage
 - Design Services Consultant to produce Basic Engineering Design for the Plant – Selection Procedure at its final stage
 - Consultant for Capacity building to manage Climate Change Risks – Selection Procedure completed
8. 我國業者國內建案經驗：
- 中興工程顧問－名間水力發電廠建設計劃、大甲溪發電廠谷關分廠復建工程
 - 榮工工程－新天輪水力電廠
9. 我國業者國外建案經驗：
- 榮工工程－印尼巴卡洛水力發電廠、馬來西亞合豐水力發電廠
 - 亞新工程－馬來西亞 Sungai Piah 水力發電計畫電廠
 - 中興工程顧問－印尼基塔水力發電第二期工程
10. 辦公室建議：
- 綜合前述評估國內業者在國內水力發電工程設計監造及土建等均有相當經驗，海外則在東南亞水力發電廠上均有建案經驗。
 - 建議國內業者可進一步聯繫相關窗口進行備標作業，但必須注意電力不穩定的風險。
11. 其他
- (1) 聯絡窗口：
- Mr. Saidov Saidmumin

Executive Director of PRG “Energy Loss Reduction Project”

OSHC Barqi Tojik

64, I.Somoni Street, Room 302,

Dushanbe 734026, Republic of Tajikistan

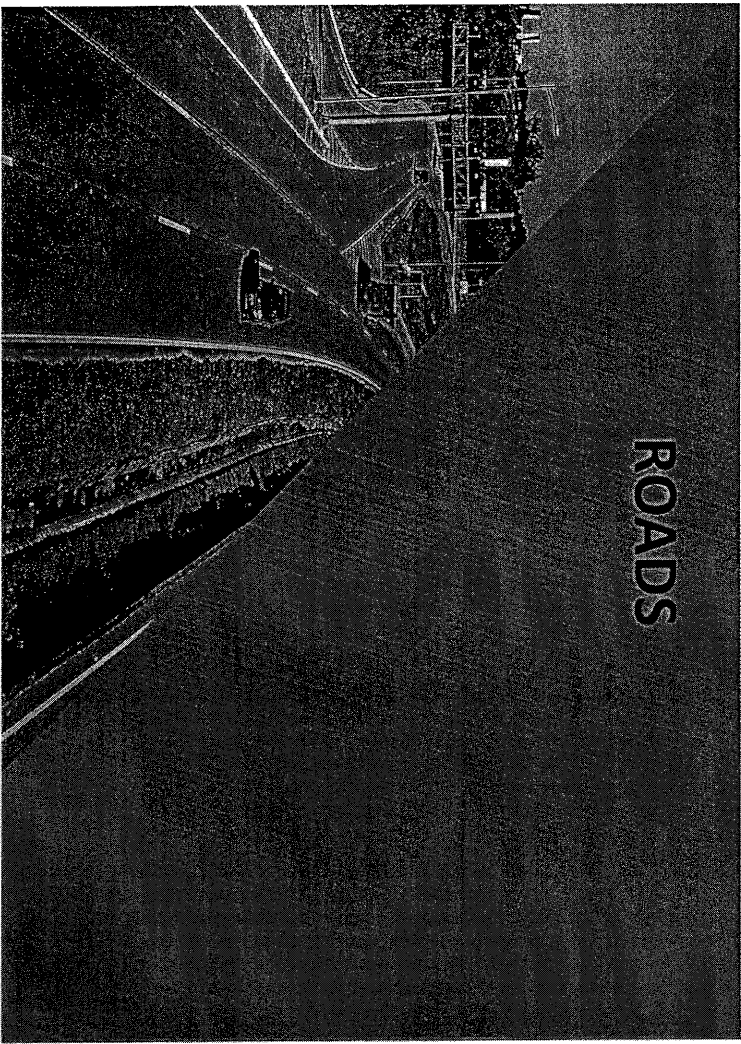
E-mail: elrpbt@gmail.com

Fax: (+992-37) 235-87-64

(2) 資料收集來源：

EBRD Website

<http://www.ebrd.com/work-with-us/procurement/p-pn-150723a.html>



ROAD CONCESSIONS

1995-2002
Weighted Average Toll Rate R\$ 10.4
1,316 km Granted on 6 roads

2003-2010
Weighted Average Toll Rate R\$ 3.8
3,305 km Granted on 8 roads

2011-2014
Weighted Average Toll Rate R\$ 3.5
5,350 km Granted on 7 roads

As of May/15
Toll rate weighted by segment length.

NEW STAGE OF CONCESSIONS

Roads

Estimated Investment R\$ 66.1 billion

5 auctions in
2015
R\$ 19.6 bi

11 auctions in
2016
R\$ 31.2 bi

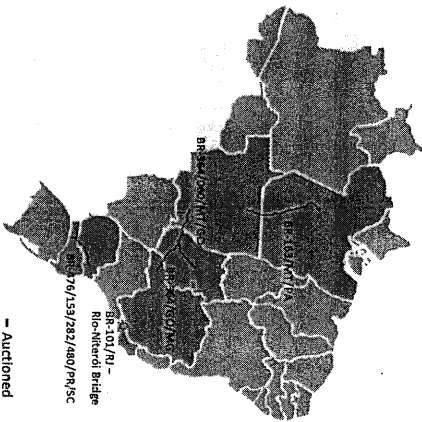
New/Investment in
existing concessions
R\$ 15.3 bi

Memo: The average exchange rate in May/2015 was R\$ 3.06 per US dollar (source: Banco Central do Brasil)

15

AUCTIONS IN 2015

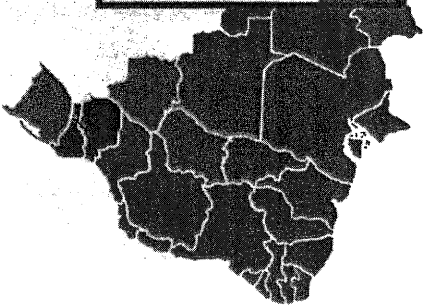
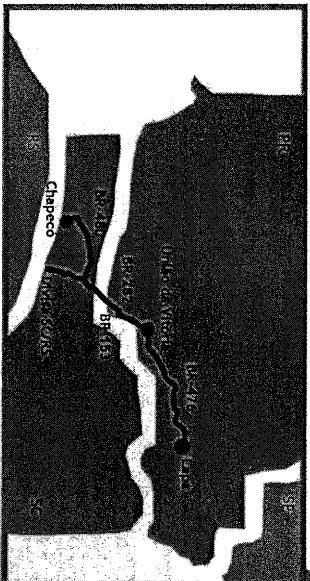
- 2,603 km of roads in 7 states
- R\$ 19.6 billion in investment: duplication, additional lanes, signaling
- RFP projects – Auction expected in the 4th quarter
- Auction for the cheapest toll
- Financing led by BNDES
- Partnership with commercial banks and capital markets



– Auctioned
– Auction in 2015

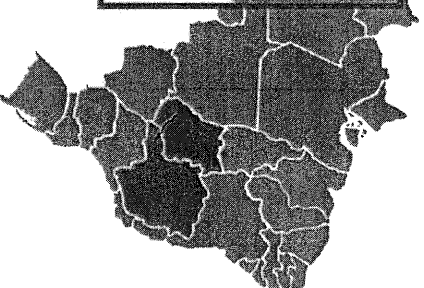
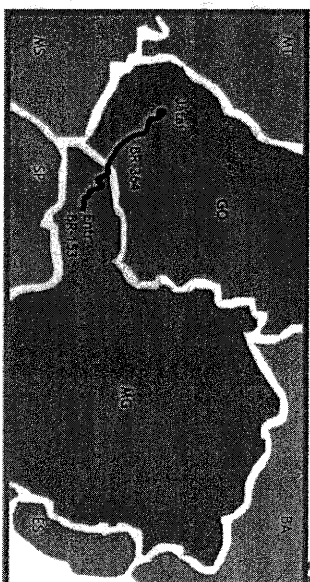
16

BR-476/153/282/480/PR/SC Auctions
1H 2015



- Road linking SC/PR
- Total length: 460 km
- Estimated investment: R\$ 4.5 billion
- Goal: transport grain, poultry and swine through South Arch ports

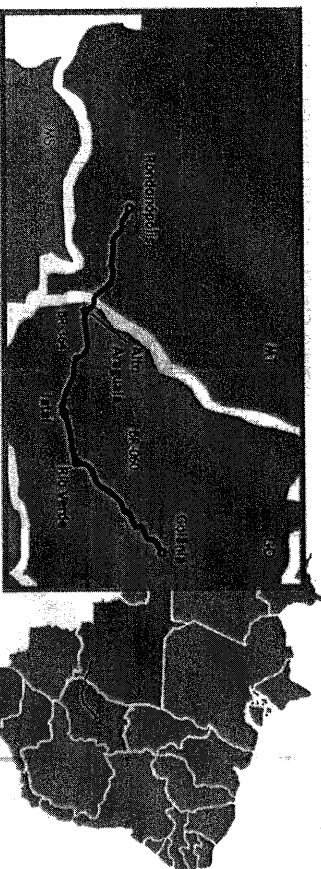
BR-364/GO/MG Auctions
1H 2015



- Road linking GO/MG
- Total length: 439 km
- Estimated investment: R\$ 3.1 billion
- Goal: connect grains producing region of southern Goiás to Triângulo Mineiro

BR-364/060/MT/GO

Auctions
1st/2015

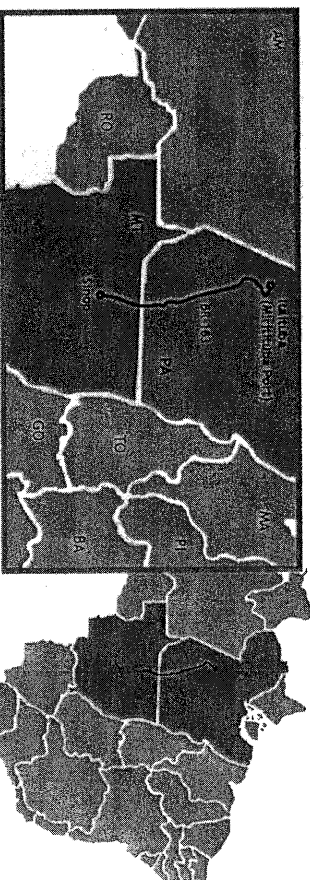


- Road linking MT/GO
- Total length: 704 km
- Estimated investment: R\$ 4.1 billion
- Goal: transport production from the Center-West region to ports in the North and South Arches

19

BR-163/MT/PA

Auctions
1st/2015



- Road linking MT/PA
- Total Length: 976 km
- Estimated investment: R\$ 6.6 billion
- Goal: increase grain transportation through North Arch ports

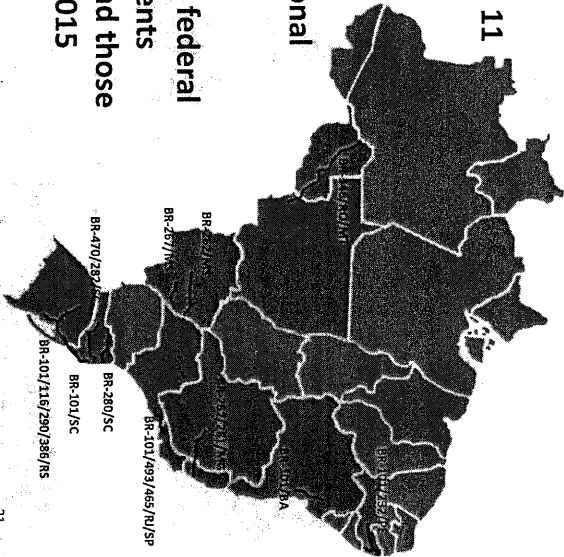
20

AUCTIONS IN 2016

— 4,552 km of roads in 11 states

— R\$ 31.2 billion in investment: road duplications, additional lanes, etc.

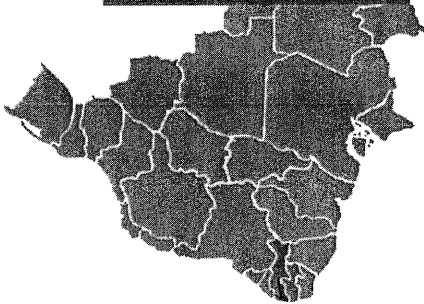
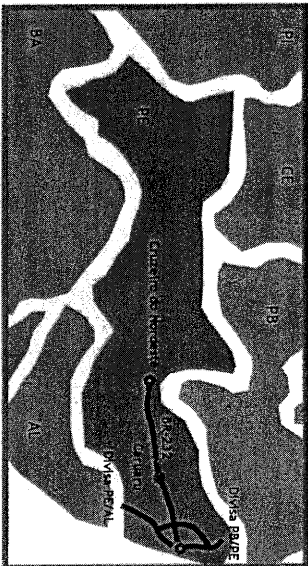
— Integration with the federal road network segments under concession and those to be auctioned in 2015



21

BR-101/232/PE

Auctions
In 2016

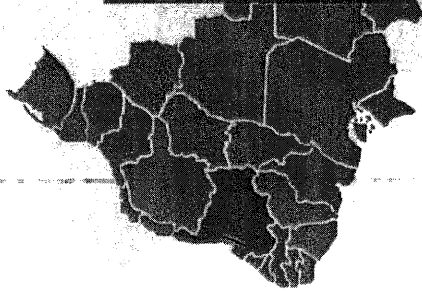
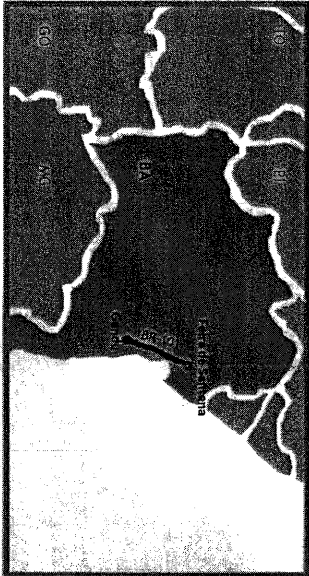


- Road in PE
- Total length: 564 km
- Estimated investment: R\$ 4.2 billion
- Goals: construction of Recife's metropolitan beltway, better access to the Port of Suape and road duplication until Cruzeiro do Nordeste

22

BR-101/BA

Auctions
In 2016

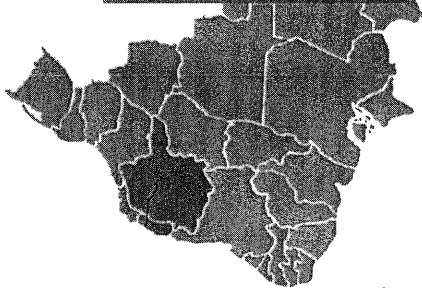


- Road in BA
- Total length: 199 km
- Estimated investment: R\$ 1.6 billion
- Goals: Duplicate segment Feira de Santana/Gandu and improve cargo transportation between the Northeast and Southeast regions

23

BR-262/381/MG/ES

Auctions
In 2016

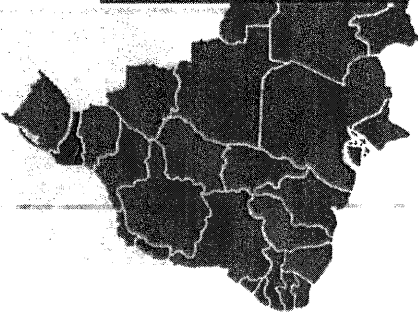
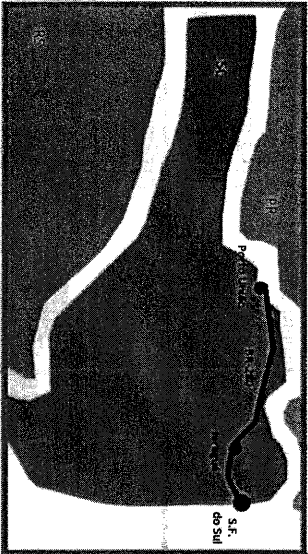


- Road in MG/ES
- Total length: 486 km
- Estimated investment: R\$ 1.9 billion
- Goals: duplicate Belo Horizonte/MG-Vitória/ES border segment, enhance safety and reduce costs

24

BR-280/SC

Auctions
in 2016

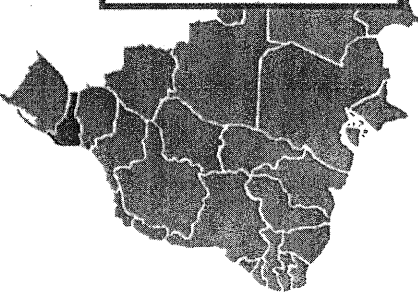


- Road in SC
- Total length: 307 km
- Estimated Investment: R\$ 2.1 billion
- Goal: improve transportation of SC agricultural and industrial production through South Arch ports

27

BR-101/SC

Auctions
in 2016

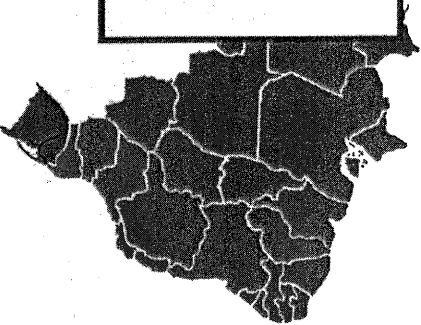
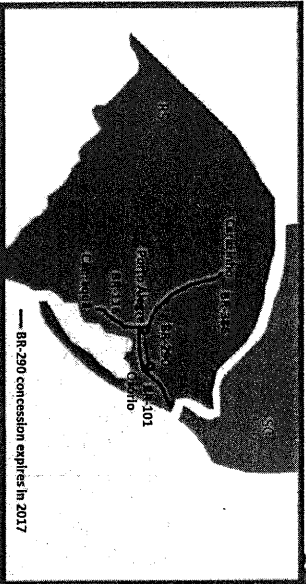


- Road in SC
- Total length: 220 km
- Estimated Investment: R\$ 1.1 billion
- Goal: increase road capacity and safety

28

BR-101/1116/290/386/RS

Auctions
10/2016

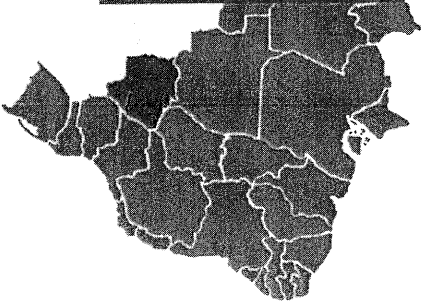
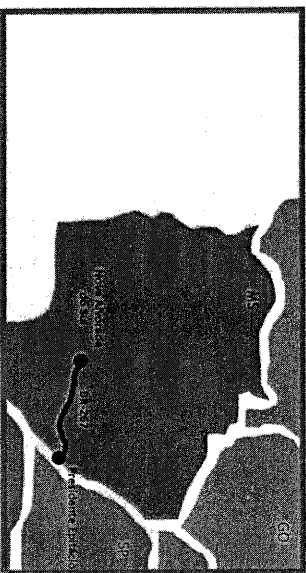


- Road in RS
- Total length: 581 km
- Estimated investment: R\$ 3.2 billion
- Goals: duplicate *Rodovia da Produção* until Carazinho, duplicate segment Porto Alegre-Camaquã and ensure *Freeway* quality

29

BR-267/MS

Auctions
10/2016

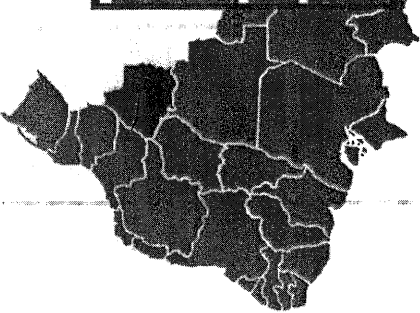
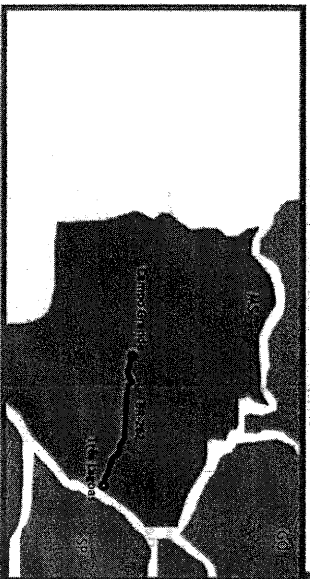


- Road in MS
- Total length: 249 km
- Estimated investment: R\$ 2 billion
- Goals: duplicate MS/SP border segment and reduce costs for the transport of farming and livestock produce through South Arch ports

30

BR-262/MS

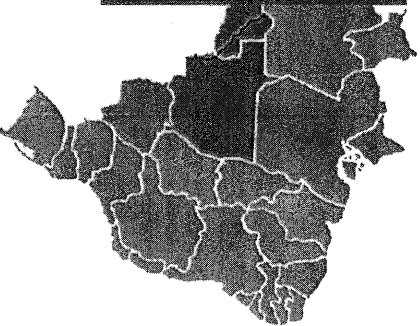
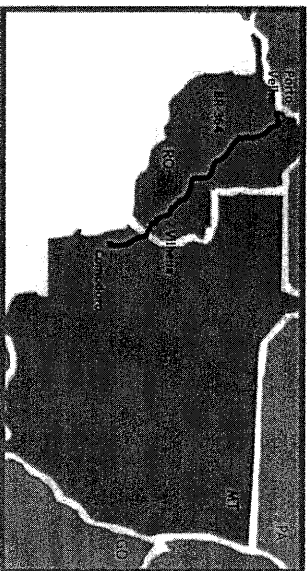
Auctions
1h/2016



- Road in MS
- Total length: 327 km
- Estimated investment: R\$ 2.5 billion
- Goals: duplicate MS/SP border segment and reduce costs for the transport of farming and livestock produce through South Arch ports

BR-364/RO/MT

Auctions
1h/2016



- Road linking RO/MT
- Total length: 806 km
- Estimated investment: R\$ 6.3 billion
- Goal: enhance the integration of the grain production regions of MT and RO to Rio Madeira waterway

NEW/INVESTMENTS IN EXISTING CONGRESSIONS
 R\$ 145,6 billion (for ongoing projects and under analysis)

