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## Elton Oil: Managing Supply, Demand, and Delivery in Senegal

Mr. Dramé, export manager for Elton Oil Company, sat down to examine the stock needs at each of Elton’s gas stations along with the list of available delivery trucks. He was filling in for Mr. Dabo, the distribution manager who was on vacation. Though the two men had worked together closely over the past few years, to fill in for each other when needed was never trivial. This time was proving especially tricky, with the oil company forecasting a period of low inventory, which would necessitate a modification in the typical distribution plan. Experience told Mr. Dramé that it was exceptions like this to the normal routine—new planner, modified plans, and related implications—that could result in bigger logistical headaches. He could remember Mr. Dabo’s joke as he was leaving for his holiday: “This is a well-oiled machine I am entrusting to you – don’t clog it up!”

### Senegal

Senegal was one of the most important economic centers of West Africa. With its capital city of Dakar located on the westernmost point of Africa, Senegal was a gateway to the continent. It had the fourth largest economy in the sub-region after Nigeria, Ghana, and Côte d’Ivoire.<sup>1</sup> Senegal’s economy was driven by mining, construction, tourism, fisheries, and agriculture, which were the primary sources of employment in rural areas. The country’s key export industries included phosphate mining, fertilizer production, agricultural products, and commercial fishing. Senegal was also working on oil exploration projects. It relied heavily on donor assistance, remittances, and foreign direct investment. Senegal reached a growth rate of 7% in 2017, due in part to strong performance in agriculture despite erratic rainfall.<sup>2</sup>

### Oil Industry in Senegal

In Senegal, the Ministry of Energy and the Development of Renewable Energy was the government body principally responsible for regulating oil exploration and production activities. It oversaw a number of agencies, companies, administrative entities, and regulatory groups operating in this sector including:<sup>3</sup>

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© 2019 Noel Watson, Diana E. Páez, and Alassane Fall. This case was written by Dr. Noel Watson, Founder of OPS MEND and Research Fellow at the William Davidson Institute, Diana E. Páez, Senior Director, Grants & Partnerships at the William Davidson Institute, and Alassane Fall, Director of the Masters on Supply Chain Management at IAM Senegal. The case was prepared as the basis for class discussion rather than to illustrate either effective or ineffective handling of a situation. The case should not be considered criticism or endorsement and should not be used as a source of primary data.

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- The Regulatory Commission of the Energy Sector (*Commission de Régulation du Secteur de l'Électricité, CRSE*)
- The Senegalese Agency for Rural Electrification (*Agence Sénégalaise d'Électrification Rurale, ASER*)
- The Agency for Energy Economics and Control (*Agence pour l'Économie et la Maîtrise de l'Énergie, AEME*)
- The National Agency for Renewable Energy (*Agence Nationale pour les Énergies Renouvelables, ANER*)
- The National Committee for Hydrocarbons (*Comité National des Hydrocarbures, CNH*)
- The Electricity Company (*Société d'Électricité, Senelec*)
- The PETROSEN Company
- The African Company for Refining (*Société Africaine de Raffinage, SAR*)

The largely state-owned SAR was the oldest refinery in West Africa, and the only one in Senegal. Established in 1961, SAR began operations in 1963. It was at the heart of the national energy policy, as it supplied oil to the Senegalese market. Crude oil was treated by the SAR before it was put on the market.<sup>4</sup> The SAR had a refining capacity of 1.2 million tons per year<sup>5</sup> and produced butane, super gas (*essence super*), ordinary gas (*essence ordinaire*), kerosene, lamp oil, gasoil, diesel oil, and fuel oil.

The CNH was also a key player in the Senegalese oil sector. Established through the 1998 energy sector reform, the CNH was a consultative entity in charge of regulating, following up, alerting, and anticipating issues or activities related to oil and gas. The CNH also advised the Ministry to issue licenses to companies seeking to engage in refining, import, storage, transportation, or distribution of oil products.<sup>6,7</sup> Further, the CNH determined the price and stock for oil every 28 days and issued a list of the prices for all oil products that were effective each month (see **Exhibit 1**). By law, all oil products in Senegal were priced according to this list, regardless of the company. Approved sales margins for distributors and retailers were also included in the list of prices issued by the CNH.

In 2018, the SAR's production was unable to meet the market demand in Senegal, which increased the risk of stockouts, and forced companies to rely on oil imports to supplement SAR's oil. To import oil or its derived products for supplying the local market or for re-export, companies in Senegal had to first obtain a license from the Ministry of Energy.

## Elton Oil Company

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Established in 2000, Elton Oil was the first 100% Senegalese-owned multinational primarily focused on distribution of oil products in Senegal, particularly super gas and diesel.<sup>8</sup> In addition to serving the Senegalese market, Elton also exported its products to Mali and Guinea-Bissau. In 2018, Elton held 10% of the market share, after Total, Shell, Oilybia, and Oryx, together the major players in Senegal's market. In the words of Elton's CEO Babacar Tall, Elton was "the largest of the small and the smallest of the large oil companies"<sup>9</sup> operating in Senegal. Elton employed an estimated 50 staff members in its administrative offices and about 300 staff members across its network of stations.

Elton was primarily supplied by the SAR but also imported oil as needed—thanks to a government license—to support distribution across its network of 26 gas stations and nine fishing pumps (see **Exhibit 2**). Elton also sold a wide array of Castrol lubricants for cars, trucks, and motorcycles. In addition, Elton offered other services, including car wash, body shop, and convenience stores (*Boutique Eden*) that offered basic products and e-services—all aimed at adding value for its customers.<sup>10</sup>

At the heart of Elton’s business principles was building trust with its customers and offering high-quality products and services. Beyond maximizing profit, Elton sought to create added value for its customers and to be recognized as providing an excellent quality of service, which the company considered to be its competitive advantage. Elton considered its own network of gas stations as a client, in addition to external consumers which included local factories, the Senegalese Office of Public Works, and the Senegalese mines.

Elton owned its gas stations and managed them directly and was, therefore, considered both a distributor and a retailer of oil products, which made the company eligible for both distributor and retailer sales margins established by the CNH. In contrast, there were other oil companies in Senegal that contracted third-party organizations to manage their stations.

## Operations and Supply Chain

When it came to distributing its products, Elton’s priorities included providing high-quality service, having reliable storage capacity and avoiding stockouts, and complying with all regulations—particularly safety rules—to avoid (for example) mixing products or cross-contamination.

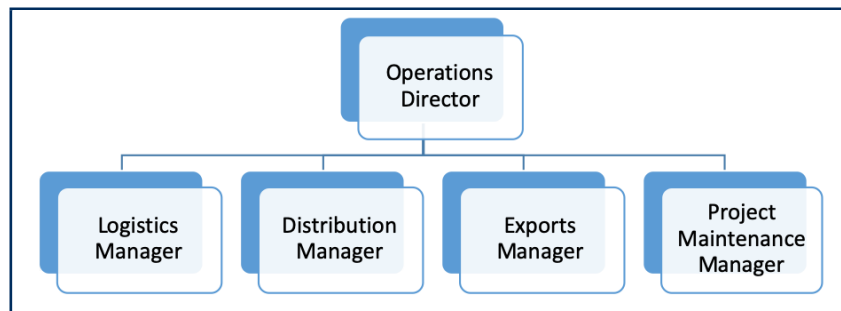
Senegalese law prohibited an oil company from also being an oil transportation company. As a result, Elton contracted with three transportation companies to distribute its products, including about 45 drivers total. The trucks were branded Elton and used only to deliver for Elton, and the drivers wore Elton’s uniforms and badges. In line with its policy of providing quality service at all times, including internally, Elton evaluated truck drivers extensively and across various criteria such as behavior, professionalism, attire, and truck maintenance. Although they were not Elton’s employees, the drivers represented the company and were evaluated by both the station managers and the external consumers at every delivery. Drivers were compensated at the end of the year for high performance.

Regarding its supply upstream, Elton was getting an estimated 60% of the oil they needed from the SAR, and procured 40% of the demand through other means. There were two ways in which Elton could fulfill its demand: 1) by buying oil in the international market and 2) by buying oil from its competitors in Senegal. Occasionally, Elton had to buy from some of its competitors (as a last resort) to build its stock for up to a week. This was, however, not sustainable when it came to more significant volumes. In terms of tonnage, Elton estimated that it purchased 60 T a year from the SAR and imported 20 T a year.<sup>11</sup>

## Operations Team

Elton’s Operations team was composed of five people, as depicted in **Figure 1**.

**Figure 1**  
**Elton Oil Operations Team**



Source: Elton Oil

The operations director, who reported directly to the CEO, drove the supply chain strategy and oversaw Elton's operations. The logistics manager was in charge of ensuring oil supply, stocks, products, materials, etc. and served as the primary liaison with the Senegalese customs office to handle oil imports. The distribution manager was responsible for all aspects of transportation and distribution, and for ensuring that Elton optimized the transport of products to keep costs low while maintaining timeliness of delivery, safety, and high-quality service. The exports manager was responsible for ensuring transportation, customs declaration, and processes to export Elton's products to its international clients in Mali and Guinea-Bissau. Finally, the project maintenance manager provided support to the supply chain and anticipated and resolved any incidents related to Elton's operations.

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## Distribution Process

Every morning, the distribution manager (DM) reviewed the information provided by the transportation companies to determine the delivery trucks available and confirm the stock needs at each of Elton's gas stations (as communicated by the station managers). Based on this analysis, he then determined the most cost-efficient delivery routes for the week. Since he knew the average daily consumption for each station, he developed projections based on that information and with input from the station managers. Elton's station managers took into account many factors to anticipate their needs for each week. For example, if there were special events, celebrations, or holidays in a given region that would affect the demand, this was taken into account.

Based on these inputs, the DM determined the stock that was needed the following week for both the land and the fishing pumps networks. (These two networks were subject to different customs categories.) He then grouped the orders by customs category, delivery location, and itinerary.

The delivery routes for the trucks were determined, based on this process, with an eye to cost efficiency. Similar to the way product prices were determined by the government, transportation rates paid to the transportation companies were established by government decree, depending on the location and distance of the delivery (see **Exhibit 3**).

To manage its stations in Senegal, Elton divided the country into three zones—North, South, and Center—and assigned a sales representative to each of these zones. Each sales representative was in charge of supervising and coordinating the needs of the stations in their zone. At each station there was a station manager who reported to the sales rep, as well as a controller. The controller and the station manager received the deliveries, ensured compliance with all rules and regulations at the stations, and evaluated the drivers every time there was a delivery. The operations team worked closely with the sales representative to address any issues regarding the stock and distribution.

Each gas station could store 90,000 L total, or 60,000 L of gasoil and 30,000 L of super gas. Elton used trucks of various capacities to deliver its products; some could carry up to 40 m<sup>3</sup> each.

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## Mr. Dramé's Challenge

Sitting down with his coffee, Mr. Dramé contemplated the work ahead of him on Monday morning. Before leaving, Mr. Dabo provided Mr. Dramé with a list of all the contacts for the transportation companies so he could be in touch with them to coordinate deliveries; the list of contacts at each of the depots Elton uses (SENSTOCK, SPP Produits Blancs, SPP Produits Noirs, and DOT - ORYX); and a list of ongoing tasks, including external clients that may be reaching out to Elton to place orders. Armed with all of this information, Mr.

Dramé felt ready for anything that may come up. Four weeks was a good chunk of time, he thought, and it went fast when you were on vacation, but slowly when you were doing the work of two people!

After a few days of business as usual, Mr. Dramé started to relax. This should not be a big deal, and also, he really should start thinking about his own vacation soon! The next day as he walked into work, his colleague M. Beye—the logistics manager who was responsible for ensuring supply from the SAR—informed him that there was a significant shortage of super gas due to a decrease in production, and now Elton would only get 60% of its original order. By the time Mr. Dramé reached his desk, there was a message in his inbox about a news article in which Elton’s CEO discussed the shortage (see **Exhibit 4**).<sup>12</sup>

It was almost 10:00 a.m. and Mr. Dramé really needed to determine how to use the available product from the SAR to cover the needs of Elton’s network. He needed to alert the station managers and finalize the delivery routes for the transportation company. What should he do?

**Exhibits**

**Exhibit 1**  
**Senegal's Oil Price Structure, May 2018**

	Super gas	Ordinary gas	Gas for canoes	Lamp oil	Gasoil
Import parity price	259007	252862	239324	246919	285412
Taxable base	284889	274898	274898	309173	298970
Port rights	31338	30239	30239	18550	32887
Prix ex-depot Price outside of the depot (1+3)	290345	283101	269563	265469	318299
Fiscal stabilization	-	-	-	-	-
Specific tax	216650	198470	38560	-	103950
Profit for distributors	69700	69700	100775	69700	69700
of which equalization of transportation	20000	20000	20000	20000	20000
VAT Base (1+3+6+7+5)	576695	551271	408898	335169	491949
VAT	103805	99229	73602	60330	88551
Sales price for retailers	680500	650500	482500	395499	580500
Profit for retailers	14500	14500	14500	14500	14500
Sales price for consumers					
In FCFA by m3	695000	665000	497000	409999	595000
In FCFA by liter	695	665	497	410	595

Source: Excerpt from Senegalese Ministry of Oil and Energy National Committee for Hydrocarbons.

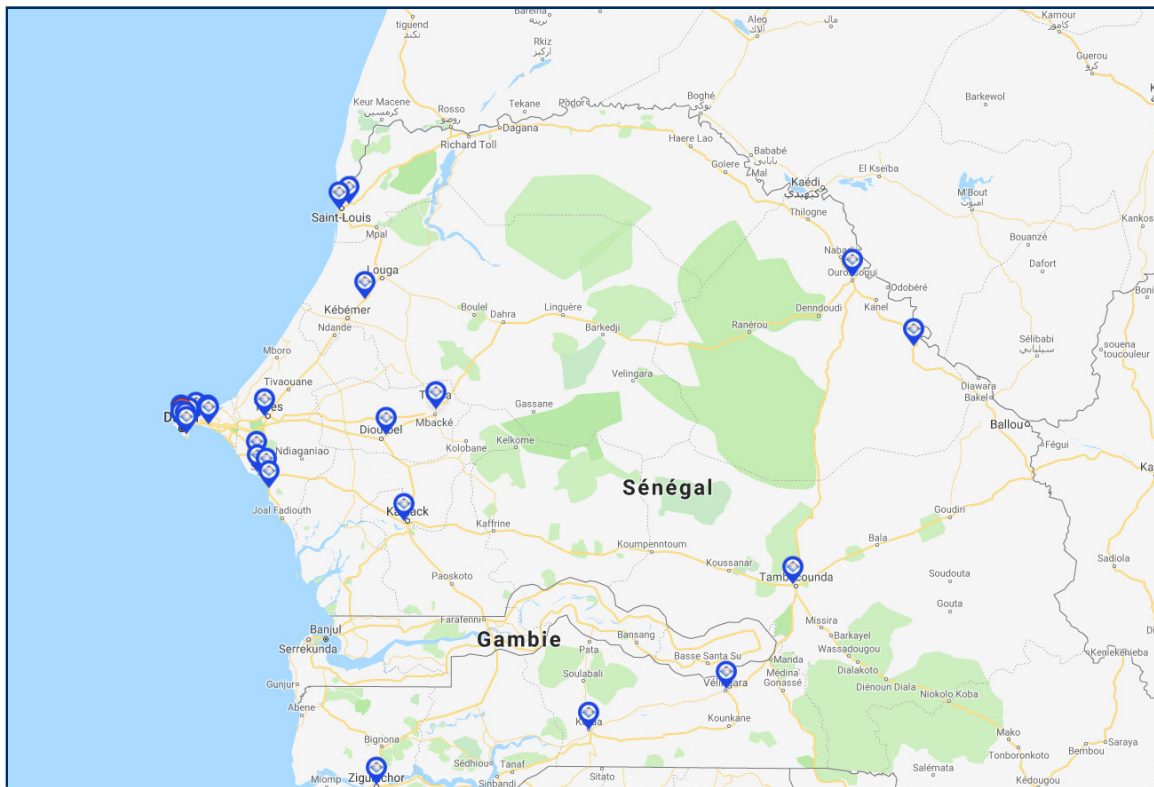
Exhibits (cont.)

**Exhibit 2**  
**Elton Oil's 26 Stations in Senegal**

Location List

Dakar Network	Beyond Dakar	North Axis	Center Axis	East Axis	Baol Axis	South Axis
Mermoz	Thiès	Guéoul	Kaolack	Tamba	Diourbel	Ziguinchor
VDN	Nguekhokh	Saint Louis	Kaffrine	Kolda	Touba	
Sud Foire	Saly	Ngallele		Oourossogui		
Colobane	Nianing			Kanel		
Hann Mariste						
Front De Terre						
Petersen						
Mbao						
Cap des Biches						
Pikine						

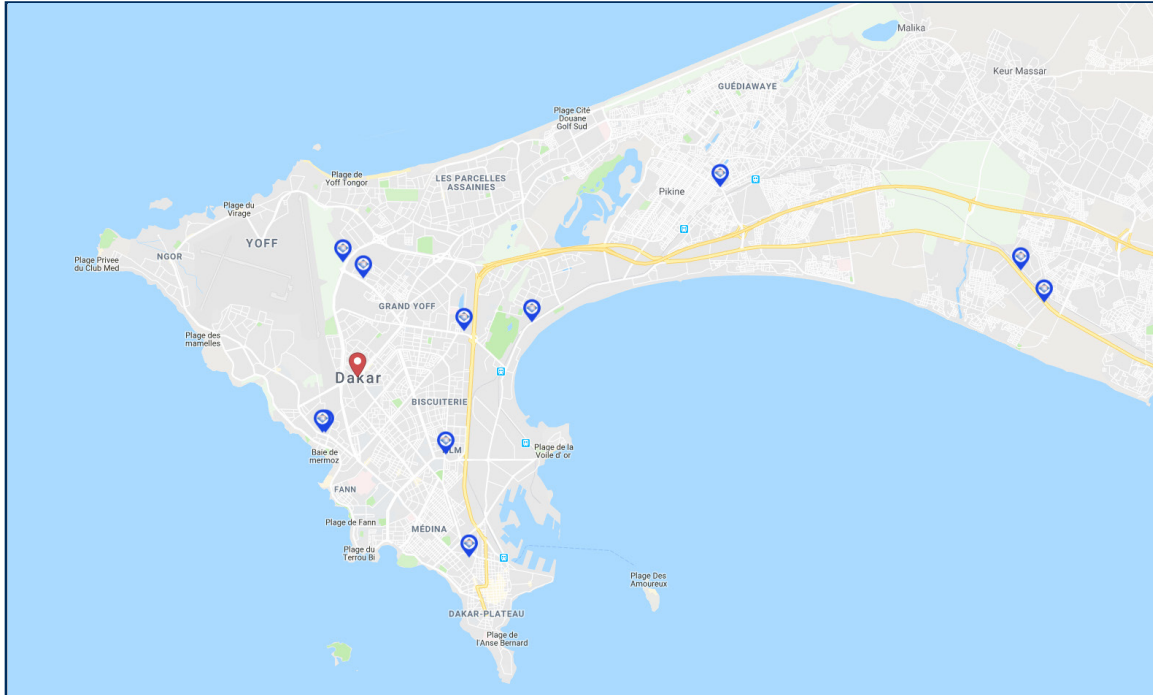
Locations in Senegal



**Exhibits (cont.)**

**Exhibit 2 (cont.)  
Elton Oil's 26 Stations in Senegal**

**Locations in Dakar**



Source: Elton Oil



**Exhibits (cont.)**

**Exhibit 3**  
**Transportation Rates for Oil Products**

**FIRST ARTICLE:***Definitions:*

- White products: super gas, ordinary gas, airplane gas, pirogue gas, kerosene, fishing gas, lamp oil and gasoil
- Black products: fuel oil, diesel oil, and similar products

**SECOND ARTICLE:**

Ground transportation rates in Dakar, on a radius of 20 km, are established as follows:

Route	Product	Rate
Depot in Dakar to depot at Yoff airport	Kerosene	384.16 FCFA/hectoliter
	Airplane gas	479.28 FCFA/hectoliter
Depot in Dakar to depot at port	Fishing gas	285.36 FCFA/hectoliter
Depot in Dakar towards a station within a radius of 20 km	White products	479.28 FCFA/hectoliter
	Black products	3834 FCFA/ton

Source: Excerpt from Government Decree, Senegal Ministry of Energy and Development of Renewable Energy.

**Exhibits (cont.)**

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**Exhibit 4  
Seneweb Article****Super gas shortage: Elton accuses the SAR**

The CEO of Elton oil company, Babacar Tall, informs that for a few days there has been a shortage of Super gasoline. This is a shortage in some stations while in others it is a complete stockout. "What must be understood is that the supply of petroleum products is the monopoly of the SAR," says the leader of Elton, interviewed by the Rfm. "Since March, the SAR knows there is a decline of its production in Super. And now for about ten days, a total stop. We have not been informed of this stop [in production] at all. So, the whole country is practically completely out." Babacar Tall adds, "This poses a big problem for our customers because somehow we have a moral contract with them to supply them every time they come to our stations, but this time it's more difficult because we were not informed of the issue by the SAR. The refinery has put us before a fait accompli."

He suggests: "Since the SAR has a de facto monopoly over the supply of petroleum products, today, the SAR should have to buy back all stocks destined for export and the problem would be solved." The CEO of Elton informs that he has sent a letter to the Ministry of Oil for arbitration. Contacted by the Rfm, the director of SAR, Serigne Mboup, swears that "there is no problem."

Source: "Super gas shortage: Elton Accuses the SAR." *Seneweb News*, 9 July 2018. [http://www.seneweb.com/news/Societe/rupture-d-essence-super-elton-accuse-la\\_n\\_251851.html](http://www.seneweb.com/news/Societe/rupture-d-essence-super-elton-accuse-la_n_251851.html). Accessed 22 July 2018.

**Exhibits (cont.)****Additional Exhibits for Case Assignment**

**Exhibit 5**  
**Demand for Station Groups**

Station Groups	Group Total (Gas & Diesel) Daily Demand (m3)	Group Daily Diesel Demand (m3)	Group Daily Gas Demand (m3)
1-5	45	30.0	15.0
6-10	40	26.7	13.3
11-15	35	23.3	11.7
16-20	30	20.0	10.0
21-25	25	16.7	8.3
26-30	20	13.3	6.7
Total	195	130	65

**Exhibit 6**  
**Inventory Information for Station Groups**

Station Groups	Beginning of Week Group Diesel Stock (m3)	Beginning of Week Group Gas Stock (m3)	Beginning of Week Group Diesel Stock (Days)	Beginning of Week Group Gasoline Stock (Days)	Group Diesel Storage Capacity in Days	Group Gas Storage Capacity in Days
1-5	100	50	3.33	3.33	6.0	10.0
6-10	110	55	4.125	4.125	6.8	11.3
11-15	120	60	5.14	5.14	7.7	12.9
16-20	50	65	2.5	6.5	9.0	15.0
21-25	100	25	6	3	10.8	18.0
26-30	150	50	11.25	7.5	13.5	22.5
Total	630	305				

**Exhibits (cont.)****Additional Exhibits for Case Assignment (cont.)****Exhibit 7****Distribution Information for Station Groups**

<b>Station Groups</b>	<b>Estimated time for delivery to all stations in group (hrs)</b>	<b>Group Distribution Cost for one roundtrip delivery from central depot (FCFA)</b>
1-5	24	300000
6-10	48	375000
11-15	48	450000
16-20	72	525000
21-25	72	600000
26-30	72	675000
Total		

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## Endnotes

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- <sup>1</sup> "Energy Sector Analysis Senegal Petroleum & Gas." *Holle Energy/Netherlands Enterprise Agency Ministry of Foreign Affairs*, Aug. 2017. <https://www.rvo.nl/sites/default/files/2017/09/Report-Energy-sector-Senegal.pdf>. Accessed 17 July 2018.
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- <sup>3</sup> "Internal Services." *Ministry of Oil and Energy*. <http://www.energie.gouv.sn/content/les-services-internes/>. Accessed 19 July 2018.
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- <sup>5</sup> "Senegal mulls new state-of-the-art refinery." *Agence de Presse Africaine*, 26 Mar. 2017. <http://apanews.net/en/news/senegal-mulls-new-state-of-the-art-refinery>. Accessed 19 July 2018.
- <sup>6</sup> "Apply for a Refined Petroleum Distribution License." *Administrative Procedures of Senegal*. [http://www.servicepublic.gouv.sn/index.php/demarche\\_administrative/demarche/1/1042](http://www.servicepublic.gouv.sn/index.php/demarche_administrative/demarche/1/1042). Accessed 17 July 2018.
- <sup>7</sup> "Distribution Licenses." *Ministry of Oil and Energy*. <http://www.energie.gouv.sn/content/licences-de-distribution>. Accessed 17 July 2018.
- <sup>8</sup> "Our History." *Elton Oil*. <https://www.eltonoil.com/la-societe-elton/notre-histoire/>. Accessed 18 July 2018.
- <sup>9</sup> Tall, M. Babacar. Personal interview. 11 July 2018.
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- <sup>11</sup> Elton Distribution Manager. Email received by Diana Páez, 13 Aug. 2018.
- <sup>12</sup> "Super gas shortage: Elton Accuses the Sar." *Seneweb News*, 9 July 2018. [http://www.seneweb.com/news/Societe/rupture-d-essence-super-elton-accuse-la-\\_n\\_251851.html](http://www.seneweb.com/news/Societe/rupture-d-essence-super-elton-accuse-la-_n_251851.html). Accessed 22 July 2018.



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