%runfile /Users/juanramonjimenezmogollon/Downloads/Improve\_Hornsrev1\_Layout\_JRJ\_11\_03\_2025.py --wdir

Enter Site to be used 1-IEA37, 2-Hornsrev1, 3-UniforSite: 1

Enter Iteration Lenght in meters: 7

Enter Number of Iterations on each Generation: 400

Enter Number of Genetic Generations: 20

Enter border aditional distance from actual laylout in m: 100

Original AEP: 715.702891 GWh

Best solution on reference layout randomized Generation 0:

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aep\_best\_sol on reference layout randomized Generation 0: 715.7804043134063

Best solution on Genetic Generation 1:

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aep\_best\_sol on Genetic Generation 1: 715.8418504009517

Best solution on Genetic Generation 2:

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aep\_best\_sol on Genetic Generation 2: 715.8756038154027

Best solution on Genetic Generation 3:

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aep\_best\_sol on Genetic Generation 3: 715.9406566496541

Best solution on Genetic Generation 4:

([423970.44965272426, 424031.5773326757, 424105.35705098516, 424164.64068637666, 424237.9784392522, 424313.0597656621, 424380.92019688897, 424436.7035487897, 424540.6853196303, 424605.97911790566, 424669.298420068, 424737.6667450365, 424796.33711107395, 424874.15270596347, 424940.5140370303, 425015.8342866292, 425092.64751798846, 425147.1779694034, 425235.8116841892, 425302.9197311054, 425358.9896430456, 425431.80621166393, 425501.0300749185, 425570.9781840243, 425659.3269674456, 425723.64303923096, 425788.4610209028, 425861.55798999, 425926.83386460657, 426002.3286939641, 426065.6195079723, 426125.1071785354, 426222.3722259924, 426291.04984194116, 426353.3833599241, 426425.05443615356, 426490.7950072592, 426547.62271577795, 426615.1353768916, 426700.44607711607, 426777.2242499772, 426852.5912084006, 426912.1314507516, 426984.2547677569, 427049.1784590201, 427103.163537005, 427169.6826686443, 427253.8739564672, 427333.7778988499, 427390.87138980423, 427460.94640501816, 427540.97021254944, 427599.42757491366, 427672.6856562423, 427738.12342917034, 427807.33920239407, 427900.8470387476, 427960.92510802764, 428036.51572293456, 428094.07502061466, 428169.69850034436, 428240.4011280508, 428306.47107103304, 428364.7799233692, 428463.3902065725, 428526.53311664605, 428594.41467256704, 428658.0994393524, 428723.49610461586, 428796.9190827255, 428861.5420286686, 428939.1382373097, 429023.166220946, 429096.0801050255, 429147.77817647805, 429226.66391534416, 429298.829215956, 429361.59303525515, 429417.08310337196, 429506.6999116874], [6151446.2442033235, 6150894.840273331, 6150334.881768158, 6149786.117142072, 6149217.490892694, 6148670.222196025, 6148110.895003917, 6147550.5967894215, 6151447.093831422, 6150898.346879943, 6150335.907391449, 6149790.555007545, 6149235.696483018, 6148665.810218677, 6148114.424075918, 6147558.758635974, 6151446.866516359, 6150888.670399458, 6150327.624496096, 6149785.078789021, 6149229.655492658, 6148659.040134862, 6148122.1926507745, 6147545.578107573, 6151456.964646846, 6150889.564099684, 6150340.231393124, 6149786.259396501, 6149229.850091221, 6148668.575478569, 6148123.7239066055, 6147544.810310991, 6151460.519096946, 6150880.239455852, 6150337.064987923, 6149783.000345013, 6149225.90560395, 6148666.601119681, 6148118.838475281, 6147557.518093234, 6151457.457852152, 6150891.495872194, 6150329.303146616, 6149779.397650834, 6149227.912899687, 6148671.015065843, 6148102.78937125, 6147555.069235334, 6151460.5876710545, 6150884.481283028, 6150338.897834502, 6149770.387604897, 6149232.381285371, 6148670.367804168, 6148115.583520378, 6147547.304370552, 6151462.349296769, 6150880.419742411, 6150333.154770947, 6149774.904206703, 6149228.892587355, 6148671.494564902, 6148111.540701479, 6147542.348836471, 6151455.054488489, 6150891.751009853, 6150329.946634141, 6149775.140844279, 6149224.134673946, 6148665.975392484, 6148114.093956572, 6147547.589377211, 6151445.119837881, 6150900.855832245, 6150341.362016446, 6149781.545594231, 6149232.415081845, 6148670.231182626, 6148104.3370247735, 6147547.861860546])

aep\_best\_sol on Genetic Generation 4: 716.0190784116431

Best solution on Genetic Generation 5:

([423968.1074476552, 424028.88451797847, 424101.3657643711, 424161.9295557713, 424233.61604842945, 424308.8639824788, 424377.82153887406, 424433.2930936673, 424541.7060731073, 424606.93098876846, 424665.9666354828, 424734.3499768312, 424796.4965199444, 424871.9765998834, 424935.84414406033, 425020.64832471346, 425093.42954549956, 425146.88771415665, 425234.04797201796, 425298.78738968156, 425356.85908751073, 425431.3081108772, 425498.5593977077, 425575.3928238221, 425659.58275322535, 425726.5483662264, 425785.2110622998, 425857.19528538594, 425928.4892097604, 426004.3480584329, 426065.2805023628, 426129.1350633957, 426223.87725959194, 426290.3174685701, 426353.41159597755, 426420.2576468783, 426487.3182871564, 426546.19762340514, 426616.3992580901, 426696.6418159796, 426774.41463704564, 426849.22736746015, 426908.4967765115, 426988.5632287667, 427047.84180420655, 427099.6029892964, 427168.35361774906, 427250.2198934525, 427331.50991550134, 427393.74325214454, 427464.2994878684, 427536.3494924427, 427595.9852381276, 427673.94055764866, 427742.9772947963, 427802.9788594538, 427901.64220352314, 427964.8014605616, 428031.73424194456, 428090.048650982, 428169.4216239524, 428239.8442902964, 428306.00873732386, 428367.0351810045, 428468.1196910118, 428526.4326923503, 428591.30729604955, 428660.7582094625, 428724.36598344665, 428792.884122267, 428862.2355392577, 428934.97263734596, 429025.1201290429, 429100.4861939881, 429148.5153167473, 429231.337801239, 429298.0664450998, 429362.09502930223, 429413.53528961964, 429509.68831046304], [6151447.56256493, 6150893.90186787, 6150335.897195984, 6149788.730621778, 6149219.679076393, 6148668.1657713195, 6148110.497116533, 6147547.478886441, 6151443.987207801, 6150898.486926587, 6150334.124258632, 6149790.066971646, 6149234.023245248, 6148661.369643361, 6148116.457335506, 6147555.212383233, 6151448.690445236, 6150887.086475059, 6150332.199820963, 6149786.5871452745, 6149228.23476223, 6148659.130841418, 6148117.490584647, 6147542.232713848, 6151453.380684184, 6150891.749369577, 6150337.94712816, 6149789.584298329, 6149225.543158956, 6148665.4907566225, 6148121.264488313, 6147540.831115023, 6151461.876708786, 6150883.853704781, 6150334.149877802, 6149778.40134013, 6149229.517901148, 6148668.2250122, 6148118.454965947, 6147555.074273911, 6151457.166191292, 6150888.790837919, 6150325.003514286, 6149777.6459615845, 6149223.667754071, 6148674.354571047, 6148105.839542886, 6147556.429695788, 6151462.256655358, 6150888.10340762, 6150340.754127814, 6149772.060182191, 6149232.290394668, 6148672.927460318, 6148113.537991753, 6147550.512221239, 6151467.173064697, 6150884.16947777, 6150336.397562152, 6149778.251893226, 6149227.8523039855, 6148670.790940916, 6148112.56017011, 6147543.43147963, 6151456.746577208, 6150896.649279602, 6150326.953680586, 6149775.516588727, 6149219.727479676, 6148666.017995683, 6148110.182435995, 6147545.267848601, 6151443.361085994, 6150902.915247688, 6150343.7715317495, 6149778.742521151, 6149234.09720742, 6148669.571341647, 6148107.510701513, 6147552.491842859])

aep\_best\_sol on Genetic Generation 5: 716.168951558137

Best solution on Genetic Generation 6:

([423967.2562995398, 424032.7904809491, 424096.76890503924, 424166.1139897402, 424229.3666008644, 424307.472467621, 424373.4095163825, 424431.12467994675, 424544.6486025934, 424602.8121814295, 424668.5822330779, 424731.18266606017, 424795.17078936385, 424871.19944085454, 424937.1794988691, 425018.49312090996, 425096.38947454415, 425150.7094261272, 425234.6068391483, 425299.4735676291, 425352.7501562036, 425435.72789773124, 425501.7196520237, 425571.47139818285, 425662.55750723224, 425723.32049697393, 425788.68744341796, 425855.6607483847, 425927.408953123, 426002.42691200424, 426061.5296462408, 426128.43964138074, 426226.69512888725, 426293.2533931766, 426352.1180224498, 426422.4150099675, 426483.20058068685, 426549.14609955833, 426617.4837529148, 426700.660534723, 426778.90719388856, 426853.5896687709, 426906.9060389126, 426987.32455388317, 427051.1449065703, 427100.647445126, 427169.0358045953, 427245.86700223613, 427335.4182212417, 427389.0712118796, 427462.4048922612, 427532.7191298822, 427591.90300983324, 427671.7903568492, 427747.58946474065, 427799.4505471188, 427900.7034257145, 427962.8505284998, 428030.595952634, 428090.9079704947, 428166.62549529865, 428240.45783855434, 428306.3851823457, 428363.35726274014, 428463.83648630517, 428522.95786052436, 428592.06304974697, 428659.8599298307, 428719.7193482768, 428794.6027734624, 428861.02100156, 428932.739060642, 429024.3801330277, 429100.4707574252, 429151.8377841258, 429234.57234320557, 429301.8468225843, 429362.5435304646, 429417.1906461924, 429507.0574738895], [6151450.959660939, 6150895.055224101, 6150338.200562096, 6149787.306906075, 6149220.633738617, 6148665.888122193, 6148110.870651434, 6147544.261459711, 6151443.2660980085, 6150894.8773758225, 6150329.860640027, 6149788.093405232, 6149235.110687293, 6148664.974079654, 6148114.8485987475, 6147553.919833086, 6151451.519201191, 6150891.954522129, 6150330.508344168, 6149787.549914194, 6149225.83325833, 6148659.958790208, 6148119.271474533, 6147538.879121999, 6151457.563894554, 6150889.160191479, 6150334.993672746, 6149789.479887764, 6149222.407618748, 6148668.463093969, 6148117.025919145, 6147540.991292696, 6151459.689340958, 6150884.686772737, 6150334.977759264, 6149781.999263806, 6149227.19005026, 6148672.817771385, 6148116.235574211, 6147550.662089743, 6151459.526653782, 6150891.382706015, 6150324.642929536, 6149781.578397634, 6149220.451689923, 6148673.718270325, 6148107.569718719, 6147552.528248106, 6151466.264281765, 6150883.998523796, 6150343.275990218, 6149772.499388452, 6149234.93921966, 6148669.614945114, 6148111.812082251, 6147551.2252902705, 6151462.925697454, 6150883.344617987, 6150336.960489559, 6149778.156899039, 6149232.362931688, 6148670.123953425, 6148110.651194185, 6147539.440337846, 6151457.864512984, 6150899.232774209, 6150326.121039667, 6149772.579326056, 6149223.41628134, 6148666.211781688, 6148108.09816733, 6147544.056764102, 6151445.279854274, 6150904.655386637, 6150340.042754184, 6149777.565033798, 6149234.356383099, 6148669.821821475, 6148108.899673595, 6147549.172276928])

aep\_best\_sol on Genetic Generation 6: 716.3027640954288

Best solution on Genetic Generation 7:

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aep\_best\_sol on Genetic Generation 7: 716.404516235838

Best solution on Genetic Generation 8:

([423974.06238044484, 424033.1890836845, 424097.30382392707, 424158.13091116253, 424233.82014195307, 424299.0472177201, 424367.16036454256, 424422.66989388125, 424540.9712613183, 424600.2333426213, 424663.09017638885, 424732.3799905448, 424796.70456659974, 424871.21124828886, 424934.9429757476, 425018.70692063204, 425096.0551595447, 425153.113043852, 425229.553290405, 425299.86435034854, 425350.50083758036, 425442.1561897594, 425502.3216080432, 425576.3941596792, 425659.951028259, 425726.52764713095, 425785.5824036162, 425847.47266877786, 425928.27607056045, 426006.1417793584, 426061.73998728575, 426137.6541236996, 426227.1190289849, 426292.35169637407, 426361.4538669934, 426421.96429856814, 426479.61218906473, 426555.04105044075, 426618.2934414959, 426700.43094644253, 426771.75589446246, 426856.73696769326, 426907.381503509, 426983.6101633658, 427053.1687101156, 427096.54028934095, 427173.514620814, 427246.2100144547, 427334.14081876853, 427384.3699035413, 427460.2218707313, 427529.4267367812, 427593.8021736725, 427667.0764544991, 427748.3425514689, 427806.41115915676, 427894.4875949137, 427958.51536544895, 428030.64125723933, 428086.42998663697, 428162.1690325028, 428238.44254195713, 428305.37744488905, 428364.67167451023, 428457.1214003071, 428521.47279580054, 428595.0125007401, 428662.1278033284, 428723.3860932822, 428790.61453693704, 428868.22265878035, 428934.53417661495, 429030.8468696115, 429098.2076936361, 429155.0743625952, 429230.2927281705, 429299.7799297611, 429364.9001145546, 429421.7777536888, 429507.2839043184], [6151454.810835064, 6150895.742583886, 6150340.717468934, 6149791.842996417, 6149226.43847326, 6148669.692077167, 6148109.117838139, 6147546.191792193, 6151445.659323, 6150893.540989977, 6150334.970125361, 6149791.295344764, 6149232.113897135, 6148660.745857598, 6148113.671637028, 6147546.307484153, 6151457.356390636, 6150898.639648197, 6150332.543297202, 6149789.491629398, 6149225.666016815, 6148658.373909405, 6148124.581144891, 6147537.082713246, 6151460.786544437, 6150887.709427504, 6150335.61495875, 6149787.280193749, 6149222.070007494, 6148667.476259499, 6148119.805880985, 6147537.40998472, 6151462.792891958, 6150881.606450493, 6150337.009050182, 6149789.156888861, 6149223.938382313, 6148673.369630978, 6148113.028257986, 6147542.733547494, 6151467.48859641, 6150889.337277085, 6150330.729092708, 6149776.673711757, 6149228.243436105, 6148670.970109611, 6148104.530804587, 6147558.545954733, 6151467.5180185065, 6150882.882585875, 6150334.200378386, 6149773.67747517, 6149236.061932442, 6148668.3827617355, 6148110.691652528, 6147545.34583219, 6151468.906509209, 6150885.774581966, 6150341.658554002, 6149786.724582336, 6149236.706668617, 6148667.101589519, 6148108.0124526145, 6147538.113071595, 6151462.233918761, 6150894.351568504, 6150327.784035725, 6149771.078416993, 6149222.8579778075, 6148659.941865897, 6148110.255735226, 6147543.882402419, 6151453.177835352, 6150909.088526812, 6150342.887165113, 6149777.074669765, 6149232.992711797, 6148671.463929458, 6148113.590921122, 6147544.06196297])

aep\_best\_sol on Genetic Generation 8: 716.4946073468789

Best solution on Genetic Generation 9:

([423978.29614842986, 424036.16398368584, 424092.6688115181, 424159.281185729, 424229.3100730694, 424303.3556180767, 424371.98631756916, 424418.395818694, 424540.3627541139, 424598.20566126535, 424663.610094576, 424732.95198676473, 424798.10596989427, 424871.4623584403, 424932.7213529432, 425015.2276624251, 425100.497983556, 425156.2348086056, 425226.2339682148, 425296.0619503019, 425352.6117924636, 425442.47801120265, 425500.0256412267, 425571.8625335676, 425661.84641214163, 425730.9606970632, 425781.6201727458, 425848.89360737836, 425928.2340651073, 426006.02792547893, 426057.4449650402, 426137.36902362894, 426228.40430714365, 426293.7000411726, 426358.49755117024, 426422.9636032241, 426475.71474171, 426553.7215263321, 426614.0607430387, 426696.5601204627, 426771.8823774751, 426855.7561092529, 426902.8863921619, 426981.6205697184, 427050.9434899745, 427097.74218659813, 427174.22050567257, 427248.0595033225, 427335.93514624616, 427387.40085400786, 427462.50023658416, 427528.9506304024, 427598.1422358317, 427664.03250412294, 427745.7084030328, 427809.6748167217, 427892.4366860055, 427958.73660275515, 428034.9012119169, 428085.9596209772, 428158.50660052564, 428238.1671597995, 428304.67925933027, 428363.230036694, 428461.51794976013, 428519.6029910131, 428598.4195208761, 428666.7441974266, 428728.1640699684, 428792.6564157985, 428869.4331745883, 428934.2221047014, 429032.5575935552, 429097.4507704932, 429159.7599028311, 429233.8128204779, 429302.72911029914, 429364.33064715966, 429426.2432294644, 429505.88211093645], [6151453.267188306, 6150899.6235173475, 6150342.682240275, 6149790.645417496, 6149227.094028588, 6148672.846086706, 6148104.636421975, 6147544.857211419, 6151448.889581007, 6150893.102114936, 6150339.470455368, 6149789.8456125, 6149227.909624439, 6148664.339815598, 6148110.087746982, 6147544.828617068, 6151455.753808076, 6150902.247031876, 6150334.885438818, 6149788.18146341, 6149230.2767956965, 6148654.990617433, 6148129.283978737, 6147532.62558149, 6151465.144367822, 6150885.254960242, 6150340.5130189955, 6149782.849292748, 6149222.134540115, 6148667.651382996, 6148123.601898347, 6147538.619340233, 6151460.510930193, 6150884.458408922, 6150339.076153476, 6149786.643118844, 6149222.623630055, 6148675.373281335, 6148112.544599072, 6147544.015477678, 6151471.433439413, 6150890.256535394, 6150329.8284285, 6149777.113734312, 6149229.090907803, 6148669.698169615, 6148108.079574003, 6147557.157264909, 6151472.029319725, 6150881.517524606, 6150333.927667259, 6149775.712531826, 6149233.718889995, 6148663.893017063, 6148106.596768657, 6147542.2897836, 6151471.520089891, 6150889.629206392, 6150338.057421955, 6149789.332562939, 6149233.815535126, 6148662.209014582, 6148104.207125817, 6147542.204479512, 6151464.541098869, 6150892.892497168, 6150330.333192271, 6149769.867611174, 6149226.042538386, 6148664.573938657, 6148115.056385314, 6147542.683114876, 6151448.760488651, 6150908.894404413, 6150343.776574236, 6149774.10064159, 6149235.708654345, 6148669.58239745, 6148113.616252888, 6147542.046129361])

aep\_best\_sol on Genetic Generation 9: 716.5767051175651

Best solution on Genetic Generation 10:

([423974.78670893813, 424031.48132814904, 424087.80996192206, 424163.88274241914, 424227.0053849841, 424298.90457837423, 424368.210480333, 424415.21387999353, 424537.92018430127, 424593.4773687226, 424662.16137764166, 424731.0748946936, 424793.4348844796, 424870.5769306795, 424934.2105912044, 425011.25285644527, 425097.37775012944, 425154.5589265636, 425226.9198560022, 425291.71789307, 425351.640349983, 425441.44079754665, 425501.2239751217, 425575.1644721255, 425660.18899305875, 425735.71863017336, 425783.55199403566, 425848.38071501424, 425926.148487451, 426005.11038143473, 426061.11249378434, 426137.8469780875, 426224.9647719987, 426293.6817822483, 426358.7403774266, 426425.15636856965, 426475.5491698476, 426550.20483058493, 426616.07059457945, 426695.66371124785, 426773.2573883577, 426856.63680884376, 426907.4779705361, 426980.42770796356, 427049.0090711002, 427099.59085442964, 427171.48836822074, 427246.1031868366, 427337.568166765, 427387.92008840793, 427459.6143835805, 427526.613359821, 427599.43155423336, 427660.4512976428, 427747.9906246873, 427812.2325929142, 427889.5765867046, 427955.93383219506, 428034.2145545999, 428088.86462695495, 428155.8194901891, 428239.16551502526, 428305.2852499232, 428366.8736836907, 428464.40538008435, 428522.20763756667, 428602.38132932014, 428666.0910911496, 428727.7739438367, 428789.6229762967, 428864.6235994447, 428933.40726339136, 429035.0087549989, 429097.9832094989, 429159.08749774226, 429238.2100570112, 429298.46356436494, 429359.6627035283, 429424.27230843663, 429508.83155753557], [6151457.424237314, 6150903.454449966, 6150341.629225567, 6149788.370263768, 6149231.318578241, 6148674.2163220225, 6148102.514991537, 6147542.093904895, 6151447.444811732, 6150897.364550943, 6150338.433226286, 6149788.247892739, 6149229.797049947, 6148661.421324318, 6148107.270241547, 6147542.828213565, 6151456.187474333, 6150898.271509311, 6150335.640580836, 6149785.571095949, 6149230.225532626, 6148656.721398208, 6148124.430103952, 6147535.397280055, 6151468.090631382, 6150887.502049098, 6150337.141374954, 6149783.791863485, 6149222.031553525, 6148664.931866726, 6148119.889202681, 6147539.585804846, 6151464.639769531, 6150888.018888421, 6150336.277981464, 6149789.683557454, 6149220.683040853, 6148677.973538908, 6148113.5466563525, 6147540.498993324, 6151468.469683055, 6150893.592460002, 6150326.075773327, 6149774.1268512495, 6149231.995913039, 6148669.059921932, 6148107.462374619, 6147554.912136139, 6151473.367015269, 6150881.421594648, 6150329.83494196, 6149776.304664941, 6149229.844688374, 6148661.312916601, 6148111.070771188, 6147544.093030457, 6151470.924810118, 6150886.987580673, 6150336.528237361, 6149785.916091607, 6149230.676832279, 6148659.370990333, 6148105.619683872, 6147542.785776185, 6151466.407484836, 6150893.739028968, 6150331.8701746445, 6149765.9925399795, 6149223.919962459, 6148668.731386712, 6148116.744108107, 6147542.150184106, 6151452.320201659, 6150905.37930025, 6150345.611268084, 6149774.992711223, 6149237.24532703, 6148668.673714404, 6148109.641646738, 6147544.087629769])

aep\_best\_sol on Genetic Generation 10: 716.6869309654714

Best solution on Genetic Generation 11:

([423971.1142211452, 424033.8211624392, 424086.0400202168, 424165.76245273364, 424226.193755558, 424295.36109557236, 424364.6892487034, 424411.4624786729, 424534.6182534284, 424590.60336279887, 424659.57652581885, 424730.8545375324, 424794.81673533976, 424874.1027364787, 424933.77401267947, 425008.871152194, 425101.7784551605, 425157.4901087154, 425222.45752698765, 425288.52904824214, 425348.9821546056, 425438.1521319217, 425499.59379917354, 425573.37282447476, 425662.20261380635, 425737.09651360346, 425784.86615453125, 425852.4291934914, 425922.493814685, 426004.7713031236, 426059.84131735185, 426134.02946669137, 426229.4699650142, 426291.81593138445, 426357.9845033731, 426427.76786842087, 426473.7388479619, 426547.8399592448, 426618.85401564674, 426693.3508262877, 426777.92398472846, 426852.10203309177, 426910.49756434327, 426984.7231181419, 427047.9035224408, 427101.1676577371, 427172.7211498503, 427250.979427967, 427337.246540239, 427387.2959575859, 427455.4864309956, 427529.7025544246, 427595.329255542, 427657.85952472454, 427752.81853053387, 427808.5008382578, 427885.4642061071, 427951.1857218293, 428034.98172916716, 428091.2895929768, 428155.2796260983, 428236.95595146896, 428308.816770741, 428367.4422162848, 428468.6650906581, 428523.99058509496, 428603.92383509764, 428669.6805866177, 428729.45882232895, 428794.4087435711, 428860.6621733162, 428936.34766245255, 429032.91033233795, 429099.2458175364, 429160.35868457565, 429235.26387783006, 429302.50060286134, 429360.93935736286, 429423.8460948666, 429505.3096497178], [6151455.475365338, 6150899.082572487, 6150345.038292428, 6149791.1367261335, 6149232.937645107, 6148670.10148267, 6148099.910055595, 6147540.240369952, 6151450.714683102, 6150897.335794253, 6150334.88846666, 6149790.73357508, 6149233.674624577, 6148656.765538987, 6148110.269051876, 6147541.598926345, 6151460.638752985, 6150897.590360083, 6150334.021584527, 6149785.214979382, 6149230.602353742, 6148654.778424972, 6148123.794086426, 6147531.025668821, 6151465.879573974, 6150890.457880986, 6150340.273004328, 6149787.121294513, 6149217.25354529, 6148660.81418933, 6148119.120463664, 6147540.993968787, 6151467.525894768, 6150891.34066847, 6150337.068012334, 6149792.295256249, 6149223.555652215, 6148677.405714802, 6148116.40360248, 6147538.091945006, 6151467.066984389, 6150889.267633428, 6150321.323211934, 6149778.209331306, 6149232.310280791, 6148672.877551375, 6148107.313417259, 6147551.341997079, 6151475.970524694, 6150881.106382264, 6150327.392270828, 6149779.594468313, 6149228.951014147, 6148665.867294747, 6148110.628206821, 6147540.865719256, 6151468.653443143, 6150889.885292927, 6150334.400330435, 6149787.841641275, 6149227.203902723, 6148659.96371866, 6148102.626914948, 6147546.3772128215, 6151464.7437836705, 6150896.660837278, 6150327.1351472195, 6149769.325120673, 6149223.072896223, 6148672.100688396, 6148116.765255023, 6147544.904211067, 6151456.073083161, 6150902.345526571, 6150347.231730234, 6149777.699708464, 6149236.884871816, 6148668.937492615, 6148108.939080402, 6147541.120967611])

aep\_best\_sol on Genetic Generation 11: 716.7540422194476

Best solution on Genetic Generation 12:

([423970.25111079187, 424031.0507592755, 424083.91529700696, 424163.8355596482, 424223.6449599542, 424294.9944767672, 424359.94267340394, 424409.14414627897, 424531.7151459814, 424594.693683449, 424662.4008219424, 424733.71847428154, 424792.29889372154, 424872.9228169847, 424936.0373580469, 425009.7338057264, 425104.87463539524, 425156.0526234482, 425222.40935144416, 425292.8746361419, 425347.51438008656, 425433.5362053009, 425499.8017338995, 425575.7146202401, 425659.0687093463, 425734.351910748, 425783.5599355812, 425855.6927630938, 425925.61174262804, 425999.90374394413, 426056.2848820024, 426134.38767513743, 426227.116501565, 426291.4431454622, 426358.46634340106, 426428.03563558904, 426477.0861212199, 426550.13214618055, 426619.7830875358, 426696.93252882786, 426775.0578595472, 426850.7998410776, 426915.14770414366, 426988.1915951177, 427047.47825767694, 427104.6291047923, 427173.3114980071, 427252.3213716011, 427336.0764393405, 427391.58620063175, 427454.3411564951, 427529.0979761371, 427592.1430238479, 427656.19602995785, 427755.7323245107, 427810.2144349677, 427886.8605531403, 427952.95869667584, 428031.50499302486, 428094.5146113932, 428160.019871735, 428237.9873035537, 428312.3302960756, 428369.8983808002, 428469.101256178, 428523.6805038245, 428603.9532762988, 428669.22412523493, 428730.08734463964, 428792.81830765173, 428862.2641940587, 428932.81802110735, 429035.1025019977, 429103.26586518495, 429159.14270994655, 429240.0526131951, 429306.863384844, 429364.25934913865, 429423.9468620024, 429503.8178469443], [6151452.624794317, 6150903.390065803, 6150345.404480523, 6149790.163689575, 6149234.679860242, 6148669.276840364, 6148100.511868409, 6147541.435757866, 6151454.571535322, 6150898.106567457, 6150335.549876804, 6149788.837357233, 6149235.469843614, 6148653.977404851, 6148111.251005809, 6147540.191693793, 6151459.230496675, 6150900.6292274445, 6150333.119357201, 6149782.831396595, 6149235.494051135, 6148656.149773989, 6148124.587948628, 6147526.848734778, 6151470.289929692, 6150888.052282895, 6150344.207446443, 6149791.420907378, 6149218.242390635, 6148662.934010653, 6148116.054925015, 6147540.717879624, 6151467.300813684, 6150887.725767944, 6150333.331581694, 6149795.841165347, 6149223.993967237, 6148673.670404484, 6148118.858595245, 6147542.698490713, 6151468.76781835, 6150886.4012257615, 6150324.855274341, 6149777.584600999, 6149230.50911243, 6148673.970990219, 6148108.279339625, 6147547.151550964, 6151479.432638427, 6150877.504351229, 6150327.920227189, 6149776.870657379, 6149231.82538154, 6148667.077331478, 6148108.533648193, 6147542.729093401, 6151466.487962406, 6150885.767042786, 6150339.023753756, 6149783.222673086, 6149222.827167226, 6148657.219691524, 6148107.166612791, 6147544.494004167, 6151465.885117528, 6150892.085451139, 6150325.442432126, 6149767.263431487, 6149223.827731524, 6148674.240745538, 6148118.754819969, 6147541.49677728, 6151457.051343758, 6150902.8137163045, 6150346.565014307, 6149774.011661098, 6149236.209755164, 6148665.971169561, 6148109.92519565, 6147537.125560014])

aep\_best\_sol on Genetic Generation 12: 716.8538723357258

Best solution on Genetic Generation 13:

([423968.9035896027, 424035.39290029416, 424079.80300774635, 424162.4175069232, 424219.0290781416, 424293.4083271854, 424355.6871163579, 424405.21853082493, 424532.07094841485, 424591.0814225567, 424666.33262373414, 424730.07523196423, 424793.38815911795, 424870.1466145411, 424936.3732381733, 425013.85667287203, 425103.2069493557, 425152.6943298784, 425221.4447353534, 425292.42191003665, 425348.9541208475, 425432.37510940875, 425496.0854975878, 425573.1489677909, 425654.43501037726, 425736.3804191287, 425782.65264621575, 425855.91063724895, 425921.5878811172, 425997.9548936727, 426058.8494456559, 426137.9155143522, 426227.45645656984, 426294.0000420411, 426356.35751610965, 426426.68585801, 426479.052380732, 426549.5664722275, 426615.15682354645, 426693.1446512005, 426774.97074967227, 426848.938128047, 426912.1831090302, 426988.38338542543, 427048.1127864832, 427102.699024939, 427175.29532510927, 427253.6203021994, 427336.2537533891, 427395.9426049425, 427452.2471997971, 427532.8347447032, 427594.8642821902, 427655.5134254726, 427752.8977443869, 427810.5465769102, 427882.94266780233, 427957.08158442983, 428034.14917673083, 428094.84694402426, 428163.5883205284, 428236.23178757186, 428308.4231413101, 428367.99768493057, 428468.9865907249, 428521.5144745644, 428606.794830327, 428672.2500442131, 428728.5787110618, 428794.6160117132, 428862.7454021806, 428937.1671709277, 429033.598980139, 429106.6034002868, 429162.60843489127, 429243.98314662144, 429306.45642809063, 429364.6990597726, 429428.27584377275, 429503.63047560956], [6151451.101640521, 6150900.506806883, 6150348.319003006, 6149789.657597882, 6149231.699642841, 6148670.317228947, 6148103.109397484, 6147537.135289975, 6151457.069189037, 6150893.505523587, 6150339.587716593, 6149784.203810186, 6149230.57815641, 6148654.733129922, 6148108.318033152, 6147538.939919643, 6151456.396906986, 6150903.867972412, 6150328.678611086, 6149783.555510647, 6149233.886842398, 6148653.223755972, 6148126.380636812, 6147524.843464404, 6151473.636999806, 6150885.685266188, 6150348.446352567, 6149788.510058815, 6149214.059814064, 6148665.560529173, 6148120.122351948, 6147543.918153323, 6151469.532189554, 6150887.856492662, 6150336.278819048, 6149793.6208314635, 6149221.334702368, 6148672.299612998, 6148120.531541055, 6147539.305166147, 6151473.228049704, 6150885.077353365, 6150326.443772647, 6149778.327690866, 6149228.463875678, 6148670.181157285, 6148104.564339712, 6147544.555947642, 6151475.545252158, 6150881.897312775, 6150331.892844962, 6149774.951878134, 6149229.442467046, 6148662.806550502, 6148104.862752515, 6147540.904711931, 6151466.433543185, 6150886.144800675, 6150335.063975041, 6149779.288025585, 6149227.529344857, 6148658.761862376, 6148104.601991094, 6147539.95947279, 6151464.837026621, 6150892.970945417, 6150328.57366496, 6149770.212625374, 6149227.178682199, 6148672.131080589, 6148117.5501340795, 6147541.642952269, 6151456.444272768, 6150898.325284378, 6150349.2436799975, 6149773.966827947, 6149232.879072096, 6148669.046944518, 6148112.829891136, 6147536.375091937])

aep\_best\_sol on Genetic Generation 13: 716.9779032770222

Best solution on Genetic Generation 14:

([423971.1040438432, 424030.42456245126, 424075.5338438097, 424158.3205774174, 424215.5860344613, 424289.8764959447, 424353.8492648258, 424403.0932130678, 424533.1216045378, 424587.42932919384, 424668.3276340408, 424732.5347974057, 424788.13166129723, 424872.46603295085, 424939.31131739443, 425015.33833291417, 425105.21360478114, 425152.72560984746, 425227.3557420044, 425289.9153194756, 425345.9933235879, 425430.7492441485, 425489.42146785406, 425571.1213123216, 425652.21057318005, 425734.64642277727, 425778.9298226734, 425860.00385351817, 425915.47618273494, 425991.8213645862, 426058.9592231729, 426144.2242793965, 426220.77132413775, 426294.3334230335, 426352.4229574654, 426424.9635349791, 426480.1592779264, 426546.0898882969, 426609.5434374271, 426691.76949229505, 426771.0264208824, 426845.6291175953, 426912.59825522336, 426985.2420180163, 427044.1742990151, 427107.7853229294, 427171.96103342186, 427247.3168406645, 427333.2049573754, 427393.91083071067, 427458.3163916451, 427529.59828510333, 427594.337600469, 427660.0909307006, 427745.99373748916, 427807.64870437037, 427881.8639578228, 427958.19608750736, 428031.91044689465, 428094.79171316844, 428161.16845973796, 428239.3248278976, 428309.8552529008, 428365.5840568141, 428471.9841400043, 428524.41882532224, 428612.1362559394, 428666.30533503735, 428722.32534965244, 428795.6476871189, 428865.56634368247, 428943.12798922963, 429038.2452563428, 429107.86279270315, 429163.9204087491, 429239.8817764846, 429302.1244684629, 429359.025860204, 429433.05167843436, 429503.93131725106], [6151449.896186841, 6150895.647103952, 6150344.198263345, 6149787.94592265, 6149236.997269823, 6148669.013719325, 6148098.446862452, 6147534.703734091, 6151457.829563208, 6150899.540774902, 6150337.055245187, 6149789.414794775, 6149227.959122991, 6148657.2226959765, 6148107.915956302, 6147535.906963889, 6151453.148467415, 6150898.731048947, 6150325.496792661, 6149787.590136084, 6149232.995566281, 6148653.908203745, 6148123.868804429, 6147527.283958645, 6151476.308964427, 6150888.145519306, 6150342.853903123, 6149785.384239782, 6149215.89280981, 6148667.943113132, 6148126.471700928, 6147538.733461962, 6151475.46109307, 6150891.693939032, 6150329.954459478, 6149793.0003204895, 6149228.097817782, 6148667.468695767, 6148115.395547915, 6147533.002509601, 6151479.788385452, 6150879.285577336, 6150329.349096467, 6149776.418617609, 6149230.623131892, 6148664.714178242, 6148100.103124514, 6147545.7289809175, 6151470.019803875, 6150879.36927506, 6150329.734159287, 6149780.725232478, 6149224.72470073, 6148663.044788788, 6148108.927405153, 6147536.527637551, 6151467.578934792, 6150882.3416077765, 6150338.062854856, 6149780.660874211, 6149222.219207143, 6148663.610529655, 6148110.164849132, 6147539.195855256, 6151469.891130107, 6150894.336461321, 6150325.336515655, 6149775.823579533, 6149224.500949428, 6148665.557431586, 6148114.732310239, 6147547.961794618, 6151462.380819462, 6150893.802027177, 6150342.952333497, 6149776.912382578, 6149236.987415754, 6148672.261167125, 6148113.9566355245, 6147532.3669882445])

aep\_best\_sol on Genetic Generation 14: 717.0829315471108

Best solution on Genetic Generation 15:

([423967.39516411914, 424027.0199354521, 424078.68413576134, 424155.9380144736, 424213.08781899855, 424288.28493160685, 424350.0568553462, 424399.8173676005, 424531.86422573216, 424584.4394349508, 424668.81634764845, 424728.955143526, 424786.1814611125, 424873.22831668536, 424938.0464732076, 425019.9181744077, 425100.4452822036, 425156.54920092726, 425232.17377781804, 425288.07504163677, 425349.79464709846, 425427.02984420944, 425486.06338918366, 425572.61248534214, 425653.0651628787, 425738.25537993904, 425780.47654764645, 425859.60658916936, 425917.8913712091, 425993.637862314, 426060.889731772, 426144.34794860857, 426225.4723377785, 426289.65639125026, 426350.0054444676, 426420.2377210186, 426485.03730071214, 426549.72889286425, 426613.277986262, 426690.4726988965, 426774.44023900846, 426844.5465216664, 426914.8622724666, 426981.22372190893, 427042.15084837354, 427112.56007624115, 427167.09682452644, 427246.78605021175, 427336.5272143459, 427393.57295660925, 427458.50059621286, 427530.8674870875, 427594.9766391039, 427661.66938209155, 427745.8862877058, 427808.2152927833, 427885.3273317872, 427957.9030631653, 428033.86771994777, 428096.0989578025, 428165.0796076839, 428241.0288442722, 428309.43623645895, 428364.362437763, 428471.9299095356, 428524.2129670046, 428610.69716473896, 428666.63863909675, 428726.0462284936, 428791.78542397585, 428860.9229557867, 428939.6606593538, 429043.1379616188, 429112.6643820512, 429161.54719341, 429237.7240792625, 429302.3378714147, 429362.2865070134, 429434.9706087274, 429508.1568270531], [6151447.965208339, 6150895.755231103, 6150343.4389644135, 6149792.386978408, 6149237.273957675, 6148666.755077105, 6148102.9217266515, 6147536.22493802, 6151459.200114527, 6150899.441018852, 6150336.5313736005, 6149789.507732108, 6149231.76637119, 6148661.638787793, 6148112.6035561375, 6147532.662421925, 6151455.827149374, 6150899.272039019, 6150329.650237471, 6149789.213287259, 6149229.931371494, 6148654.547487722, 6148119.001873474, 6147526.731486792, 6151476.038545295, 6150884.393130024, 6150340.010131702, 6149790.045095364, 6149220.639905871, 6148670.867670097, 6148124.228591769, 6147541.835076502, 6151480.022172606, 6150896.557402725, 6150332.3850411875, 6149790.270994611, 6149232.080558747, 6148671.488515649, 6148112.185470623, 6147534.699309934, 6151478.66261843, 6150874.922217364, 6150325.386337197, 6149772.046125265, 6149230.767397506, 6148667.816476333, 6148099.934621333, 6147549.796319921, 6151470.923082368, 6150877.908634215, 6150333.02648247, 6149782.242444211, 6149227.739953298, 6148667.274808434, 6148104.891669489, 6147536.651674772, 6151465.528007658, 6150885.037471042, 6150334.004567055, 6149784.390065008, 6149220.710017387, 6148667.798847681, 6148112.271896963, 6147538.933705697, 6151470.750664873, 6150897.658540272, 6150324.622604556, 6149772.668602013, 6149219.991916718, 6148667.839752869, 6148112.050157606, 6147547.448497174, 6151462.429453802, 6150890.25346072, 6150344.956742857, 6149780.362496407, 6149232.497081318, 6148671.719832044, 6148111.734226258, 6147532.965732184])

aep\_best\_sol on Genetic Generation 15: 717.1832593246222

Best solution on Genetic Generation 16:

([423969.05886563007, 424020.4976892088, 424084.6761922605, 424155.7751254112, 424215.4089013352, 424287.03100106044, 424355.38467718934, 424405.4147656277, 424528.0460845768, 424586.20996312535, 424668.96458677395, 424728.25188785285, 424787.59200359083, 424879.9533925814, 424939.33997967, 425021.3741646988, 425101.31500441587, 425162.11865669716, 425233.73080745584, 425282.30313380744, 425346.1597793152, 425429.2766655615, 425484.9574518679, 425567.02889953676, 425655.0076534152, 425736.911012057, 425779.81184983207, 425862.17796220875, 425913.7650498734, 425992.10389786615, 426065.17563431076, 426139.02817064413, 426230.0188000009, 426284.945959397, 426346.3769079647, 426425.5487218192, 426480.72811061237, 426544.0178135695, 426618.3298836459, 426690.493954761, 426774.4583559554, 426848.97014829196, 426910.98527292965, 426979.1678884088, 427038.3391635684, 427108.854372448, 427163.14293681213, 427243.70390722645, 427335.7330471263, 427400.2428594436, 427464.0192438077, 427533.74432469415, 427595.1434542415, 427663.42338939407, 427744.1978281129, 427815.0777510545, 427889.29297507304, 427958.4216428537, 428027.59627515374, 428093.6182515258, 428170.92712858896, 428244.2349002366, 428309.85526349535, 428369.37947792705, 428475.8577717934, 428517.8174335528, 428604.65100243373, 428663.688592629, 428731.36814631755, 428795.5400785279, 428857.42296352977, 428943.16337508126, 429047.7436337008, 429111.38577347016, 429168.15743085433, 429241.8753729786, 429302.66580889985, 429365.25416319555, 429438.3686905, 429505.40028055664], [6151450.740709398, 6150900.511107635, 6150341.91531897, 6149794.413747522, 6149243.322166249, 6148660.605153356, 6148103.615469959, 6147531.234437891, 6151455.692180726, 6150899.780328105, 6150333.5993081005, 6149787.639493234, 6149237.900530773, 6148662.7764422875, 6148115.111109005, 6147537.817551146, 6151460.071995205, 6150904.185763893, 6150334.758957137, 6149793.756282592, 6149235.058573107, 6148658.169813066, 6148119.402851311, 6147524.977187041, 6151470.853569982, 6150891.216674536, 6150344.841338269, 6149783.364735675, 6149219.58726178, 6148671.456149072, 6148119.977938002, 6147541.502670145, 6151479.476657555, 6150893.665302524, 6150328.770859662, 6149785.362355118, 6149237.319792777, 6148671.618596289, 6148117.476677522, 6147530.187560885, 6151483.368761529, 6150879.063765559, 6150325.88962486, 6149773.429837068, 6149227.193481353, 6148661.209973606, 6148106.883372751, 6147544.830658503, 6151475.926882862, 6150881.857732107, 6150328.802485393, 6149777.056805432, 6149229.581818252, 6148661.385295947, 6148106.465488361, 6147530.0912738945, 6151472.386645395, 6150891.440108917, 6150335.706297317, 6149781.903214079, 6149222.151119549, 6148673.830315462, 6148115.826942477, 6147531.981908637, 6151476.768154606, 6150900.289708877, 6150327.886454195, 6149774.811793115, 6149218.75150962, 6148669.315444434, 6148113.944256063, 6147540.846306426, 6151455.54986264, 6150884.653002102, 6150343.553410263, 6149782.461081364, 6149239.086204891, 6148675.994723898, 6148111.092103901, 6147530.267280897])

aep\_best\_sol on Genetic Generation 16: 717.2809346159033

Best solution on Genetic Generation 17:

([423971.33244507335, 424019.2215882947, 424091.4565050091, 424149.0232312757, 424218.04911223473, 424285.1718095637, 424355.5825230455, 424399.79322813073, 424528.5633275723, 424586.1505751511, 424668.89972863777, 424733.3830895599, 424790.6676921176, 424883.5408037814, 424936.89599646983, 425021.8234194933, 425107.897176045, 425160.2577500333, 425230.63490899245, 425286.2817357992, 425349.8396163705, 425431.72366404143, 425479.70303756633, 425567.4937312415, 425650.0903195515, 425736.4610125626, 425781.0529127055, 425855.6369830429, 425920.4721167068, 425987.63445041457, 426061.85872112087, 426133.8058213924, 426231.47919061827, 426285.80795638636, 426352.88478318235, 426431.5654145437, 426483.96697910485, 426550.6097575133, 426622.3550409747, 426688.74051538226, 426780.2170158675, 426848.103146409, 426906.3075163159, 426975.65329537774, 427038.63802195125, 427102.193601015, 427162.05737448024, 427236.89922082477, 427337.9168671324, 427396.59956785507, 427468.23666671687, 427531.2362782966, 427593.39425048203, 427660.7056158195, 427750.7892448127, 427816.9349883734, 427884.7398465127, 427951.67178449617, 428021.08661728457, 428094.802176061, 428165.8012992419, 428244.98896114016, 428306.856102192, 428371.2345775442, 428476.93307644693, 428522.1780068299, 428599.30803642154, 428667.96807784325, 428731.71957210894, 428791.67978899693, 428860.7462557669, 428948.68011223146, 429054.7409682395, 429111.0623122896, 429173.06647504773, 429245.7537191367, 429306.2723981352, 429369.39030240016, 429435.72602902714, 429505.3763889378], [6151453.165505902, 6150899.063150813, 6150342.479036556, 6149789.202309487, 6149248.117518606, 6148667.12975979, 6148099.199539993, 6147528.164277199, 6151454.559919025, 6150898.411605789, 6150329.342323227, 6149791.3773050215, 6149243.008358414, 6148667.22380515, 6148108.842156718, 6147531.456763898, 6151463.375910702, 6150897.734555057, 6150332.352920464, 6149788.115428937, 6149230.040067712, 6148660.662602118, 6148113.380469804, 6147521.782428694, 6151471.448355246, 6150885.315442282, 6150339.695182987, 6149781.749162544, 6149217.563681976, 6148671.313921947, 6148113.656822738, 6147543.978362919, 6151481.678511215, 6150896.404650056, 6150326.72325141, 6149778.678638016, 6149231.604661648, 6148676.0881045805, 6148113.451934081, 6147526.676407466, 6151486.471344718, 6150883.372487603, 6150321.605537245, 6149777.551603174, 6149232.088081591, 6148656.682687867, 6148112.656083967, 6147545.075311048, 6151482.8852876155, 6150879.222287187, 6150329.171948907, 6149778.473900368, 6149231.46471711, 6148665.19688026, 6148104.689374644, 6147535.5166401, 6151470.743958117, 6150886.248673024, 6150342.345910584, 6149780.18144292, 6149217.687973492, 6148670.99954133, 6148109.742667952, 6147537.103092017, 6151473.898137456, 6150904.244124947, 6150334.176265931, 6149772.132692594, 6149217.819638169, 6148674.874216675, 6148112.781001962, 6147539.612491595, 6151457.426006926, 6150886.863984735, 6150343.018855013, 6149780.746460513, 6149241.890268327, 6148674.050831288, 6148111.738486503, 6147529.232072321])

aep\_best\_sol on Genetic Generation 17: 717.3816052390547

Best solution on Genetic Generation 18:

([423974.61475210055, 424018.7085146165, 424090.53704124247, 424152.1882391021, 424213.8788864153, 424280.481536318, 424354.4697424927, 424399.74083339784, 424525.8739361178, 424586.31173466257, 424671.5173283132, 424734.1418912662, 424791.3265615587, 424879.31090922095, 424938.59384919243, 425024.493350629, 425111.49651320634, 425156.16150419996, 425228.2083898085, 425282.542980846, 425346.5925753117, 425427.202027111, 425483.91880972893, 425566.72231505887, 425650.80095728504, 425733.95528411935, 425780.28058317275, 425856.84995607164, 425916.5856660401, 425989.1046187024, 426066.387243461, 426132.6077136293, 426234.09432331135, 426290.2716630516, 426348.3285497077, 426431.76314648666, 426479.6207855337, 426546.4381451477, 426623.67809922644, 426686.54529052495, 426780.9711939613, 426849.6460450581, 426905.8632766156, 426972.3770061797, 427043.47364968545, 427103.2975607567, 427164.62540469813, 427235.23193587334, 427340.90467923007, 427397.82645945315, 427466.8579059804, 427532.52824268857, 427597.34450401185, 427658.9516350944, 427750.45448880823, 427816.8969964745, 427881.78788201377, 427948.5653293021, 428019.7676989485, 428095.67640256713, 428170.118853649, 428247.2120124657, 428308.83370069985, 428368.1511267859, 428480.0055141027, 428518.5835358776, 428594.9109588788, 428670.93701862113, 428734.55899170984, 428793.4501997322, 428863.6663789356, 428952.05023917794, 429055.8141462923, 429111.97845029156, 429173.06917581166, 429241.33510848944, 429308.5156700778, 429373.3538957124, 429440.0546684655, 429506.7434698173], [6151453.681347991, 6150901.791710356, 6150343.873386138, 6149786.932788765, 6149247.933120932, 6148671.7053238815, 6148095.018517074, 6147528.244797936, 6151453.463405966, 6150896.88196459, 6150326.856163699, 6149792.5973268105, 6149246.727356906, 6148666.92263163, 6148110.236852227, 6147528.455476678, 6151461.505902806, 6150902.418164295, 6150331.519762954, 6149791.618882635, 6149230.057557894, 6148659.789157358, 6148110.963856465, 6147522.26817171, 6151473.491452263, 6150884.371528077, 6150336.795371453, 6149777.090409642, 6149222.455319379, 6148666.719629087, 6148111.111006352, 6147545.049714323, 6151481.856952391, 6150891.725068346, 6150329.158075793, 6149779.390778995, 6149231.030357304, 6148672.208504799, 6148115.308170127, 6147527.814768591, 6151485.470587268, 6150886.348130873, 6150323.254610232, 6149774.390700068, 6149232.241425962, 6148659.530473649, 6148117.072207904, 6147541.505615001, 6151481.8655207995, 6150878.605187222, 6150330.385978991, 6149779.4484856, 6149232.931612931, 6148668.711329552, 6148107.240277904, 6147536.708297635, 6151467.778071136, 6150886.592273861, 6150344.238300052, 6149776.329404758, 6149215.4309735475, 6148668.808216371, 6148107.072095173, 6147533.819074565, 6151471.012038313, 6150899.418040793, 6150335.371118867, 6149775.343049033, 6149216.101948472, 6148674.888471348, 6148110.776253224, 6147537.536521594, 6151460.310438535, 6150883.495929116, 6150344.806203657, 6149783.160547701, 6149241.346754008, 6148669.766341281, 6148111.923231058, 6147524.388147985])

aep\_best\_sol on Genetic Generation 18: 717.4578804954178

Best solution on Genetic Generation 19:

([423972.50182971644, 424016.9187319484, 424087.23083540285, 424152.1062564035, 424212.19770698494, 424276.28286923823, 424350.07528770855, 424400.0317922082, 424521.3852942366, 424590.8282806865, 424674.8207316519, 424735.43593493063, 424791.7942182506, 424883.05041608174, 424936.0163569484, 425025.81369772786, 425112.8631207535, 425155.7144378701, 425232.30494280247, 425283.4261312478, 425348.4516244065, 425428.69930013735, 425481.95971684164, 425566.3244767552, 425651.7219973833, 425734.7345661032, 425782.42609543045, 425853.8993867539, 425919.3266177918, 425991.3716808672, 426065.7588961872, 426137.352807862, 426233.2983477451, 426291.7203079566, 426349.5001316095, 426436.348735251, 426480.83280630753, 426550.8943970277, 426626.489225416, 426683.8225185844, 426778.7374668482, 426852.38033566857, 426909.6779046856, 426975.1241922469, 427041.5991593585, 427102.48909514956, 427163.5953849477, 427236.8428653683, 427337.7056332907, 427402.17899751384, 427469.6494307029, 427537.22524994164, 427601.2645709291, 427663.82311780617, 427754.14682535466, 427814.7339578738, 427878.16023827624, 427951.6717979948, 428016.925417807, 428093.194821883, 428170.7355842225, 428251.1907902673, 428312.18769290665, 428368.561783508, 428480.96741709433, 428521.19627918466, 428597.99971486704, 428673.5270988599, 428736.8682228443, 428796.00391033705, 428866.75108913105, 428950.672894137, 429060.4849756443, 429108.2846767908, 429173.7033316526, 429244.7885911952, 429306.4205654018, 429377.50731806544, 429438.4160109336, 429504.94190082845], [6151457.954929183, 6150903.180143537, 6150340.962490314, 6149790.422229553, 6149250.564931787, 6148672.958982719, 6148099.529572501, 6147528.793899629, 6151457.122001721, 6150900.1025733035, 6150328.390278885, 6149796.777921634, 6149245.8655217225, 6148666.095692748, 6148108.582236986, 6147525.34121427, 6151462.731778151, 6150900.192745741, 6150335.1288440395, 6149794.857035347, 6149229.610909952, 6148663.521944958, 6148111.683729648, 6147520.813493467, 6151472.000270995, 6150882.671293642, 6150334.04940911, 6149779.297918328, 6149223.162925368, 6148662.879671328, 6148112.266075967, 6147543.20947955, 6151478.524431819, 6150888.623240529, 6150325.783415226, 6149777.870276716, 6149233.250480433, 6148669.019652886, 6148117.694157455, 6147531.574644536, 6151483.953636128, 6150883.695603633, 6150322.3604828045, 6149777.556541456, 6149234.513454528, 6148662.6465529855, 6148120.910095601, 6147539.597668829, 6151478.246654191, 6150880.928678271, 6150333.338782132, 6149782.19284301, 6149237.637035495, 6148665.2069930015, 6148107.959246587, 6147534.920588111, 6151470.595619316, 6150882.084350706, 6150342.2371545145, 6149779.97120311, 6149214.0701244725, 6148665.571357272, 6148110.212631945, 6147532.389847552, 6151472.403332012, 6150895.085127027, 6150339.090713198, 6149776.987699483, 6149215.733153976, 6148675.437994652, 6148112.2118903175, 6147534.100664041, 6151460.878159862, 6150887.109775186, 6150341.86017831, 6149779.187024381, 6149244.9980254285, 6148670.2332918765, 6148107.249782927, 6147528.606176555])

aep\_best\_sol on Genetic Generation 19: 717.554214138503

Best solution on Genetic Generation 20:

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aep\_best\_sol on Genetic Generation 20: 717.6485564502868

finalsolution

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aep\_max: 717.6485564502868

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Gráfico, Gráfico radial

Descripción generada automáticamente

Imagen que contiene Calendario

Descripción generada automáticamente

Calendario

Descripción generada automáticamente

Gráfico, Gráfico de dispersión

Descripción generada automáticamente

Gráfico, Gráfico de dispersión

Descripción generada automáticamente